HNOLOGY DEPT.

First Copy

Fleet Owner

VOLUME 22
NO. 2

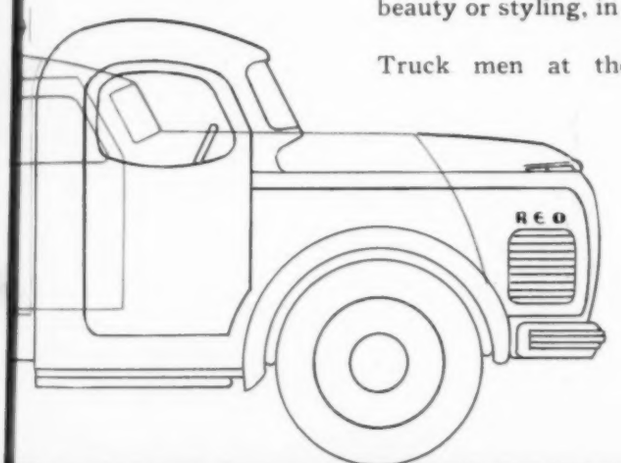
DEVOTED TO THE BETTER OPERATION AND MAINTENANCE OF ALL AUTOMOTIVE FLEETS

FEBRUARY
1939

12" to 18" More Load Space!

BLACK .. *Reo advanced design*
GREEN .. *conventional design*

The new 1939 Reo Truck has 12 to 18 inches *more* load space than any other present day cab-behind-engine truck. This revolutionary improvement in design has been accomplished without setting the cab high—without making parts inaccessible—without cab-over-engine higher cost — without sacrificing beauty or styling, in fact, improving it.



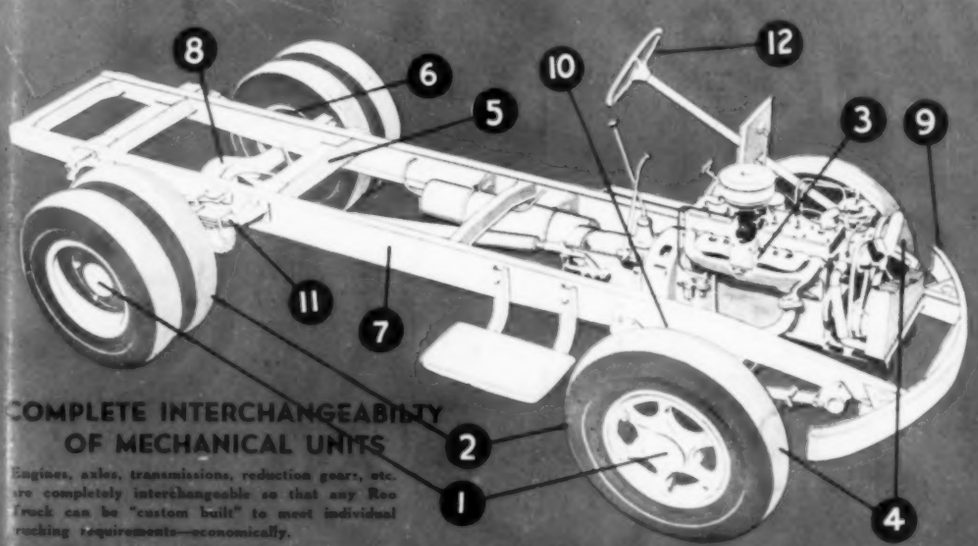
Truck men at the New York, Paris and Toronto Shows acclaimed it the most outstanding truck development of the year! There is obviously a vital payload story behind this advanced Reo design, and you'll certainly want to check into it before making any further truck purchases.

REO MOTOR CAR COMPANY
LANSING, MICHIGAN

REO

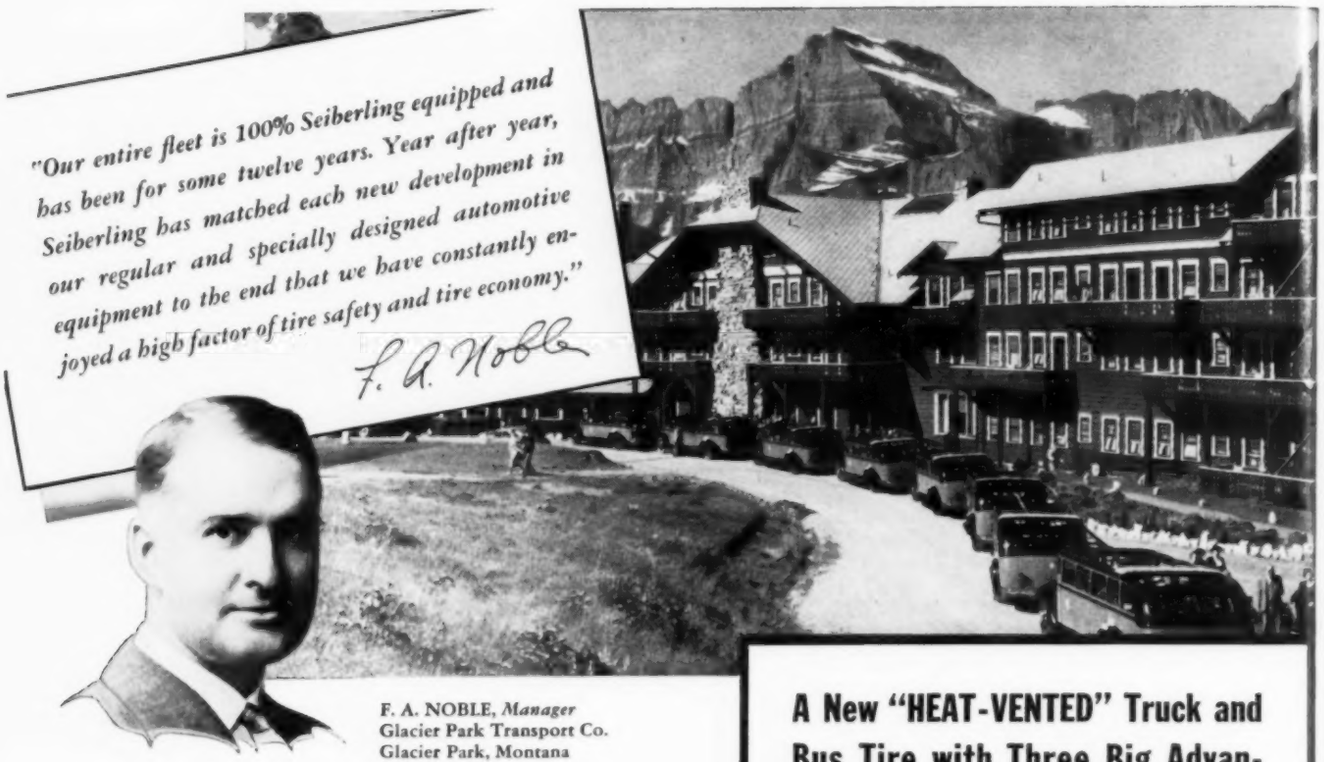
Advanced Chassis Features

1. Large Loading Space on Short Wheelbase. Wheelbase for 9-foot bodies—120 in. For 12-foot bodies—145 in. For 15-foot bodies—165 in.
2. Ideal Weight Distribution—on both front and rear axles.
3. Famous Gold Crown 7-Bearing Engine. Five models. All with chrome blocks, improved carburetion, developing higher torque. All parts easily accessible.
4. Wide Tread Front Axle. Provides short turning radius. Front tires track perfectly with single rear tires.
5. Exceptionally heavy Box-Type Cross-members.
6. Large Brake Area. Ample and powerful hydraulic brakes — from 264 sq. in. to 436 sq. in. on the various models.
7. Sturdy Frame. Depth of rail 8-13/16 in. to 9 in. Heavy stock—extra deep channel.
8. Heavy-Duty Rear Axles. Two-speed or double reduction differentials optional, at extra cost.
9. Bumper Attached Directly to Frame.
10. Ample Fender Clearance for Large Tires.
11. Spring Width 3 in. On all truck models.
12. Easier Steering. Due chiefly to equal weight distribution.



COMPLETE INTERCHANGEABILITY OF MECHANICAL UNITS

Engines, axles, transmissions, reduction gears, etc. are completely interchangeable so that any Reo Truck can be "custom built" to meet individual trucking requirements—economically.


"Our entire fleet is 100% Seiberling equipped and has been for some twelve years. Year after year, Seiberling has matched each new development in our regular and specially designed automotive equipment to the end that we have constantly enjoyed a high factor of tire safety and tire economy."
F. A. Noble

F. A. NOBLE, *Manager*
Glacier Park Transport Co.
Glacier Park, Montana

SEIBERLINGS Will Save Money for You, Too!

● When tourists go to Glacier Park, they expect *dependable* service . . . and they get it! Mr. Noble uses Seiberlings exclusively because he has found them unsurpassed in keeping his schedules up to the minute . . . and in keeping his costs per mile at a minimum.

Every year, more and more operators find how easily Seiberlings lick their tough tire problems for them. If you want to find out what they'll do for *you,* put a pair or a set of them to the test on your toughest job.

We'll rest our case on their performance against the tires you are now using!

For PROOF of what Seiberlings are doing on jobs *like* yours, mail us a brief description of your equipment and your operating conditions. We'll send you actual "case histories" of other operators using Seiberling Tires under conditions similar to your own.

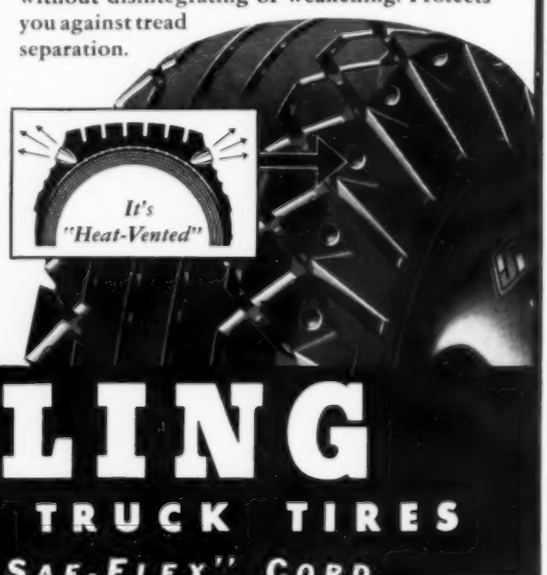
Address a letter or postcard to Commercial Tire Division of
THE SEIBERLING RUBBER COMPANY • Akron, Ohio

A New "HEAT-VENTED" Truck and Bus Tire with Three Big Advantages Found in No Other Tire!

1 **"SAF-FLEX" CORD** gives this new tire a carcass that's *"heat-proofed."* "Saf-flex" cord develops less internal heat and retains its strength for the entire life of the tire. Superior to synthetic cords because it is not affected by moisture that may get in through tread or sidewall cuts.

2 **PATENTED "HEAT-VENTS"** cool the blowout danger zone. No other manufacturer can give you these patented vents that pump hot air *out* and pull cool air *in* right down to the body of the tire.

3 **THERMO-WELD CUSHION GUM** literally welds the tread to the carcass. A new compound that stands extreme friction heat without disintegrating or weakening. Protects you against tread separation.



SEIBERLING

HEAT VENTED TRUCK TIRES

BUILT WITH SEIBERLING "SAF-FLEX" CORD

Thrifty Fleet Operators *Show the Way* to Greatest Economy and Dependability

Because spark plugs are a major contributing factor to engine efficiency and economy, cost records of thrifty fleet owners provide an excellent guide to the best spark plugs for every engine.

The performance features you naturally look for in a spark plug are the same which leading fleet operators require. For example, Gray Line Pacific Tours, like so many exclusive users of Champion Spark Plugs, require spark plugs with maximum spread between pre-ignition and fouling. Champion Sillimanite, the world's finest insulating material, and Champion's new and patented Sillment construction, which permanently seals them against troublesome leakage common to ordinary plugs, combine to insure perfect ignition over the widest possible range of operating conditions.

Only Champion Spark Plugs have these perfected and unduplicated features. Demand them for your buses, trucks or cars, and get the extra power, smoothness, economy and dependability which make them the universal choice of Champions.

If you have a problem that is troubling you, we would welcome an opportunity to work with you to overcome it. A letter or wire will have one of our factory trained engineers on the job immediately.

IT'S THRIFTY TO INSTALL NEW SPARK PLUGS—*Demand* CHAMPIONS

WHERE TYSON GETS EXTRA CAPACITY...

In this conventional cage-type bearing (No. 565 Series) you have

18 LOAD-CARRYING ROLLS

In this Tyson *Cageless* Bearing (No. 565 Series—interchangeable with cage-type above) you have

24 LOAD-CARRYING ROLLS

Tyson eliminates the cage and fills the spaces with *more rolls* . . . affording 25% to 30% more capacity—twice the life—greater rigidity. Where hard service is the rule rather than the exception, your Tyson jobber can show you definite savings in bearing maintenance costs.

Cageless FOR HARD SERVICE *Cage-type* FOR REGULAR SERVICE

Tyson

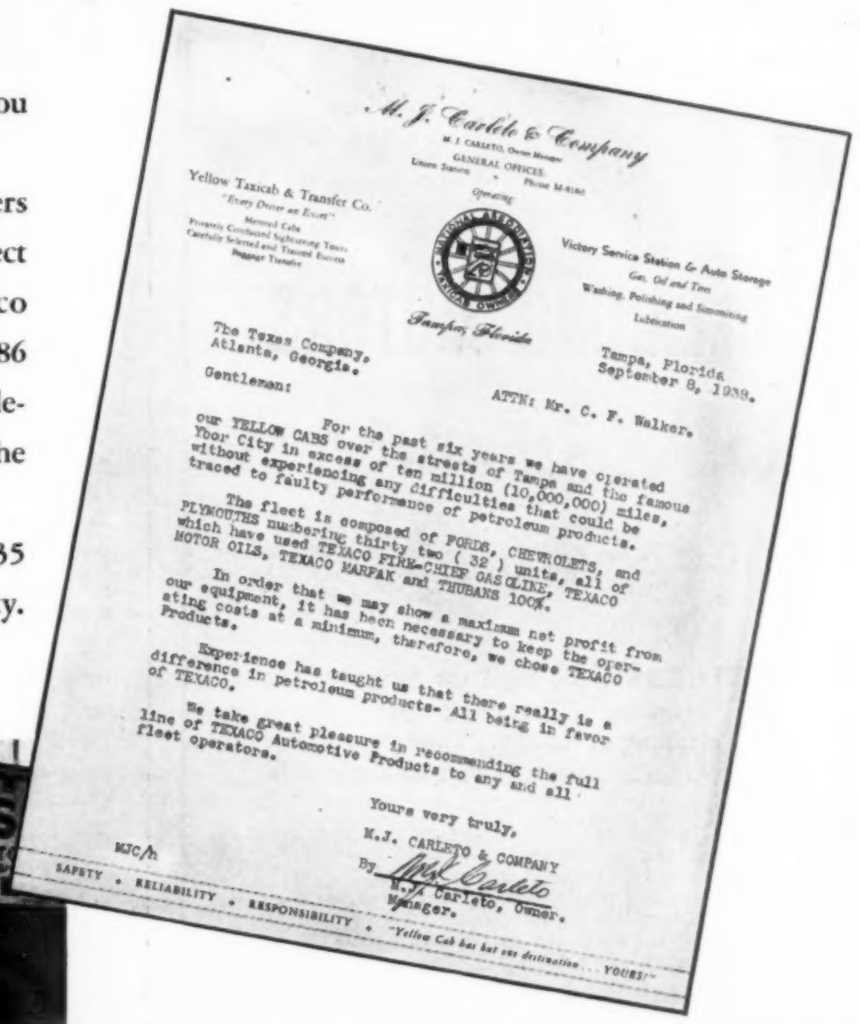
TYSON ROLLER BEARING CORPORATION, MASSILLON, OHIO

"There Really is A Difference"

Read the letter and see if you don't agree.

Texaco automotive engineers stand ready to help you select and properly apply Texaco Automotive Products and 2186 warehouses assure prompt delivery. To order, phone the nearest one or write:

The Texas Company, 135 East 42nd St., New York City.



M. J. Carleto & Company

M. J. CARLETO, Owner Manager
GENERAL OFFICES
Liberty Statistics — Phone M-6180

Yellow Taxicab & Transfer Co.
"Every Driver an Escort"
Metered Cabs
Privately Chauffeured Sightseeing Tours
Carefully Selected and Trained Escorts
Baggage Transfer

Operating
Victory Service Station & Auto Storage
Gas, Oil and Tires
Washing, Polishing and Simonizing
Lubrication
Tampa, Florida

Tampa, Florida,
September 8, 1938.

The Texas Company,
Atlanta, Georgia.

ATTN: Mr. C. F. Walker.

Gentlemen:

For the past six years we have operated our YELLOW CABS over the streets of Tampa and the famous Ybor City in excess of ten million (10,000,000) miles, without experiencing any difficulties that could be traced to faulty performance of petroleum products.

The fleet is composed of FORDS, CHEVROLETS, and PLYMOUTHS numbering thirty two (32) units, all of which have used TEXACO FIRE-CHIEF GASOLINE, TEXACO MOTOR OILS, TEXACO MARFAK and THUBANS 100%.

In order that we may show a maximum net profit from our equipment, it has been necessary to keep the operating costs at a minimum, therefore, we chose TEXACO Products.

Experience has taught us that there really is a difference in petroleum products- All being in favor of TEXACO.

We take great pleasure in recommending the full line of TEXACO Automotive Products to any and all fleet operators.

Yours very truly,
M.J. CARLETO & COMPANY
By M. J. Carleto
M. J. Carleto, Owner.
Manager.

MJC/h

SAFETY • RELIABILITY • RESPONSIBILITY • "Yellow Cab has but one destination . . . YOURS!"

TEXACO STATION *where Tampa's Yellow Cabs are replenished with Texaco* Fire-Chief, *Texaco Motor Oils Insulated, Marfak, and Thuban.*

•

(Right) **YELLOW CABS** *in Tampa, Florida, edging up for refilling of tanks at the Texaco pumps. Six years of Texaco leaves this operator more sold on it than ever.*

TEXACO

TEXACO REG. T.M.

Motor Oil and Marfak

Texaco Dealers invite you to tune in The Texaco Star Theatre—a full hour of all-star entertainment — Every Wednesday Night — Columbia Network—9:00 E.S.T., 8:00 C.S.T., 7:00 M.S.T., 6:00 P.S.T.

MONEY SAVING MAINTENANCE
"KINK of the MONTH"

CLEANING MOTORS *without scraping!*

THERE is no need for long, tedious brushing or scraping operations in the cleaning of motors. Take your choice of two faster, easier, lower-cost methods.

1. Just charge steam cleaning equipment with the recommended Oakite material. You will be amazed at how quickly heavy grease and oil deposits are cut away, leaving the motor surfaces clean, just the way you want them for appearance and maintenance purposes. Or,

2. With simple, inexpensive equipment, spray motors with a cold solution of Oakite Composition No. 9. Allow a fifteen to twenty minute soak. Then pressure rinse. Motor surfaces are not only clean in appearance, but are clean to the touch. There is no sticky, oily film such as is left when kerosene or gasoline are used.

Both methods of cleaning are fully described in an interesting, fact-filled 36 page booklet, based on the successful practices followed by leading fleet owner and other service shops. Write for your FREE copy today. It will point the way to time and money savings you will want to take advantage of throughout the year.

OAKITE PRODUCTS, INC.
52G Thames St., New York, N. Y.
Representatives in all Principal Cities of the U. S.

OAKITE 1909 1939 30 YEARS OF SERVICE TO INDUSTRY

OAKITE *certified* CLEANING
MATERIALS & METHODS FOR EVERY CLEANING REQUIREMENT

Charter CCA Member

FLEET OWNER

Published Monthly in the interests of Automotive Fleet Owners, who Operate or Direct their own Service, and devoted to the Better Operation and Maintenance of Truck, Trailer, Bus, Passenger Car, Taxicab and all Automotive Fleets.

VOL. 22 New York, February, 1939 No. 2

In This Issue:—

Stripping the Thread	Editorials	9
There are 424 Safe Drivers in this Fleet		14
Operating a Co-Op Dairy Fleet	Will W. Henry	16
How to Keep Cost Records	J. F. Winchester	22
Tire Retreading Experiences in Fleets	H. Clay Fischer	24
News of the Truck Industry		30
Two New "Heavies" Announced by Mack		32
Dry-Zero Offers "Lindsay Structure" Bodies		34
Trouble Shooters' Department		38
Plymouth's Commercials for 1939		39
Letters to the Editor		40
New Tractor Has Twin Motors		41
Here and There in the Truck Industry		42
Gar Wood's Two Latest Products		43
Chrysler's New Fluid Drive in Flywheel		44
Question-of-the-Month Club		45
New Products for Road and Shop		47
New Trade Literature (Free for the Asking)		50
Index to Advertisers		65

Published Monthly By

FERGUSON PUBLISHING COMPANY, Inc.
90 West Street, New York, N. Y.
(Telephone: REctor 2-9179)

Hal H. Clark, President
A. L. Conley, Sec'y. and Treas.
H. Clay Fischer, Editor

L. W. Perkins, Vice-Pres., 3260 Elsmere Rd., Cleveland, Ohio
Telephone: Longacre 2718
Irving E. Hand, Vice-Pres., 224 S. Michigan Ave., Chicago, Ill.
Telephone: WEBster 7502

PACIFIC COAST REPRESENTATIVES:
E. D. Newfield, 574 Eddy St., San Francisco, Calif.—Tel. ORdway 2822
C. B. Clark, 3221 S. Figueroa St., Los Angeles, Calif.—Tel. Richmond 2271

CIRCULATION SUPERVISOR:
George C. Friedman

Subscription: $2.00 Yearly; Single Copies 25c

(Copyright 1939 by The Ferguson Publishing Company, Inc.)

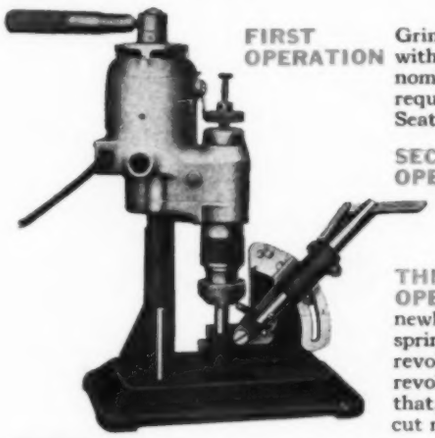
Tappet Adjusting Eliminated

HERE'S HOW IT'S DONE!

Stems Accurate to .001" Depth

Uniform tappet adjustments have always been practically impossible to secure and maintain. Today it's almost impossible to even reach them. In cars with non-adjustable tappets, the uniformly accurate grinding of stems has been a serious difficulty. The result has been noisy, faulty valve action.

But now, with HALL Valve Servicing Equipment, valve faces, seats and stems can be so accurately ground that no valve stem in the motor will vary more than .001". The result is quiet, better performing valves and no tappet adjusting in L-head motors with adjustable tappets.



FIRST OPERATION Grind all seats till they indicate true to within .001". To do this quickly and economically in all type seats and any metal requires the HALL ECCENTRIC Valve Seat Grinder pictured at left.

SECOND OPERATION Clean valve and stems and grind valve faces true and to a good WET GRIND finish, using the HALL Model 80 WET REFACER.

THIRD OPERATION Adjust HALL Depth Gauge so it rests on the newly ground seats and contacts (under spring pressure) the tappet sufficiently to revolve the gauge indicator about one revolution as shown in Figs. 1 and 2. Note that, for the sake of example, indicator in cut registers 25 or .025".

Fig. 1

FOURTH OPERATION Decide if you want flat or the new quiet crowned valve stem end. Loosen hold-down screws G and turn angle cam H in Fig. 3 so that indicator points to flat or crown-grind, then tighten hold-down screws G.

FIFTH OPERATION

Next place Depth Gauge in Stem Grinding Fixture on HALL Model 80 Refacer shown in Fig. 3. The Gauge A is placed in Taper Valve Seat B with stem resting in Valve Stem Support P as shown in Fig. 4. In this illustration we show $\frac{5}{16}$" support selected for Ford stem. Spring tension Stem Clamp S holds the stem down into its place in perfect alignment with Taper Valve Seat B (in Fig. 3). The Gauge and Fixture are moved forward by Hand Wheel C until the Gauge Stem contacts Grinding Wheel D. The Dial Indicator E will move as contact is made. Continue feeding in until the Dial Indicator E again reads 25 which, for the sake of example, we are assuming is the reading of Gauge for first valve seat depth measured and recorded. Hold Gauge in this position then turn the graduated Friction Slip Ring F till it reads 25 as shown in Fig. 3. Do not let Hand Feed Wheel C move while doing this. Through this adjustment the Refacer has been SYNCHRONIZED with Depth Gauge A and the Gauge is no longer required and is removed.

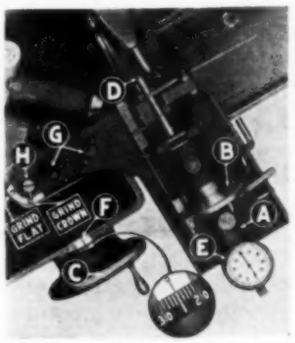


Fig. 3

Fig. 4

SIXTH OPERATION

Now grind the Stems. They must always be WET ground with a full heavy stream of liquid to keep the Stem cool and prevent expansion during the Grinding. Never grind dry because the Stem will heat up and "grow" from .003" to .007" while grinding and more stock will be removed than desired. Place the first Valve into Taper Seat (L in Fig. 4) and Stem into Support P. Slide Clamp N into position and screw in until solid contact is made against Valve Head. Behind Knurled Adjusting Nut M there is a light tension spring that allows Spindle to push back from Grinding Wheel if fed in too fast. If properly adjusted, the operator can feed the fixture in the total desired amount all at once. If the tension is correctly set this excessive feed will not stop the Grinding Wheel. The spring will keep on feeding the Valve Stem into the Grinding Wheel until the correct amount is removed. Of course, operator may feed Stem in gradually with Hand Feed Wheel (C in Fig. 3).

Fig. 2

The first Valve must be ground to the motor manufacturer's specified clearance which, for example, we shall say is .012". AfterGraduated Slip Ring (F in Fig. 3) has been set for Depth Gauge reading, which we explained in the preceding operation was 25, we must add the motor manufacturer's recommended clearance of .012", making 37. Continue to feed Stem into Grinding Wheel until 37 is reached and Stem grinds free. Valve is now ready to be removed. In the next Valve Seat the seat-to-tappet depth may read 30. Grind this Valve Stem same as previous Valve except that you will add .012" clearance, stopping at reading 42. Follow this procedure on all Valves, grinding each Stem to the required depth for each individual seat to tappet, plus specified clearance.

When Valves ground as above are re-installed in the motor they should not vary .001". This method is accurate when directions are carefully followed.

See this equipment at your HALL Jobber's NOW. If you own a HALL Model 80 WET TYPE Refacer, you can adopt this method by purchase of only the new Stem Grinding Ficture and Model S Depth Gauge.

THE HALL MANUFACTURING CO., 1620 Woodland Ave., Toledo, Ohio

HALL SYNCHRONIZING VALVE SERVICE EQUIPMENT

N-17 is for engines of 7- to 10-quart crankcase capacity.

N-16, identical to N-17 except in size, is for engines of less than 7-quart capacity.

The filter element in its metal container can be lifted and replaced without the use of tools.

Where cost-records are closely watched . . .

TO KEEP THE OIL CLEAN

. . . means to keep expenses down!

Mechanics know the danger of dirt, dust, carbon, sludge, and other impurities that get into the motor oil. They recognize these abrasives as the greatest enemies of operating efficiency. Plenty of operators have found out that Purolator-protection against these evils is a certain way to reduce repair expenses . . . to lower costs-per-mile.

With the N-Type Purolator, you know your oil is clean because you see it's *clear*. When the oil on the measuring stick no longer shows clear, then you know it's time for Purolator element replacement — an inexpensive job the driver or mechanic can do in a jiffy. It is not even necessary to drain the oil in the filtering case; in the N-Type Purolator, this oil is all clean oil.

N-Type Purolators are available with a circulation adequate for any size crankcase. They have an exceptionally large capacity for dirt absorption. This means longer, more economical element life.

Purolator is a product of MOTOR IMPROVEMENTS, INC., Newark, New Jersey.

PUROLATOR

THE OIL FILTER ON MOST 1939 FACTORY-EQUIPPED PLEASURE CARS AND COMMERCIAL VEHICLES

VOL. 22
NO. 2

FLEET OWNER

FEBRUARY
1939

DEVOTED TO THE BETTER OPERATION AND MAINTENANCE OF TRUCK, TRAILER, BUS, TAXICAB, PASSENGER CAR, AND ALL AUTOMOTIVE FLEETS.

Stripping *the* Thread » »

(The Editor's Column)

TRUCK SHOWS—WHEN, WHERE?

● It may have seemed strange to you readers, when this publication in December came out with a story proclaiming the recent National Motor Truck Show a success, while the Editor of a worthy contemporary called it "a dismal flop." . . . Since it is but human to proclaim *any* worth-while movement "a success," we hope you won't get the idea that we were steeped in blissful ignorance, or doped-up with "show-hysteria" when we wrote that somewhat flattering report—see pages 14 and 15 of our December issue. . . . A casual check-up among the many exhibitors—*after* the conflicting stories appeared—revealed the fact that, by and large, most of them were *not* as disgruntled as others would have you believe. . . . And some of them even have expressed "complete satisfaction" with the Truck Show as a whole. . . . If you have read between the lines of our general show report, you no doubt have gathered that the show attendance was not spectacular; it was disappointing, to be truthful, but it was measurable qualitatively, if not quantitatively. . . . However, if some people want to gauge the success of a Truck show by the number of "heads" counted at the entrance gates, it's quite o.k. with us. . . . Maybe we should strive for bigger attendance, and count the appearance of a schoolchild with the same totalizer that we use for counting the fleet executive? . . . Again, it's o.k. with us. . . . Here's an idea. Granted that the five previous Truck Shows, held in Newark, N. J. and New York City were not able to draw sufficient human beings—or at least, not quite so well as sugar draws flies—perhaps *you* can give us the answer? . . . Where should the 1939 Truck Show be held? . . . During what part of the year? . . . Who should be invited? . . . Should there be an admission charge? . . . If so, how much? . . . Should admission be restricted to the trade only, or should attempts be made to draw in anybody who wears pants or a skirt? . . . The Editor of this publication will be glad to hear from any and all parties—truck and equipment makers, dealers, jobbers, fleet operators, truck-drivers, and in fact anybody who happens to read this. . . . All constructive letters will be published in future issues of this publication, regardless of whether we agree with the thoughts contained therein, or not. . . . We'd like to hear from you, gentlemen. . . . And so would those on whose shoulders rests the responsibility of future Truck Show management. . . . Thanks, a lot.

●

DRIVER-TRIBUTE

● That the driver of a truck is vitally tied up with the success of any company's product or service and has a close bearing on the public's attitude toward truck transportation, most everyone will agree. . . . Realizing this fact, International Harvester occasionally devotes a magazine advertisement dedicated to the truck drivers of America. . . . One such page advertisement is reproduced here in miniature. This ad. appeared during January in prominent national magazines (including this one), attaining a total circulation of well over 11,000,000 copies. . . . Although this piece of copy appeared in FLEET OWNER last month, we are glad to reproduce it in this manner as a further tribute to "that hardy race of men at the wheel". . . . And particularly because every one of our readers is *intimately* concerned with the future of truck operation. . . . We don't expect that you can read the small type; just read this announcement of it and join us in our congratulations to International Harvester. . . . Incidentally, if you'd like a 4-color reproduction of it, 28 x 38 inches—a jumbo enlargement, for use as a poster, you can get one complimentary, by just asking for it.

●

FAMOUS LAST WORDS

● *"It's far better to come to a 'dead stop' at a stop-sign, than to be 'stopped dead' by an accident."* . . . Our thanks to Bell Telephone Company of Pennsylvania for this neat bit of paraphrasing. . . . Make a sign out of it and post it where your drivers can see it. . . . That's *our* suggestion to you.

●

H. Clay Fischer
Editor

●

The Editor's Column » »

(Continued from Page 9)

ATTENTION DIOGENES!

● This is the short story of a man who insisted on paying all he owed, rather than try to squirm out of it, which is not so difficult in tumultuous times. . . . Back in 1932, John W. Anderson, president of The Anderson Company, makers of accessories at Gary, Ind., found that his company (like many others) had liabilities of $163,000 with present income running short of operating expenses. . . . Of course, Mr. Anderson's Anderson Company could have gone into bankruptcy or offered some other "legal" settlement to creditors. . . . But not Mr. Anderson, who felt that *all* of his creditors were entitled to *all* of their money. . . . So he convinced a Federal judge that all would be well if the business continued under an equity receivership. . . . Well, they stayed in business, gave employment to hundreds of people, and made modest profits which permitted them to reduce their obligations, little by little. . . . What makes this story "news" is the fact that it was only recently that the last 15 per cent of the original debt was paid, and the receivership terminated. . . . If Diogenes were here today, we are sure he would single out Mr. Anderson as his "honest man". . . . Of course, there may be many other business firms with similar performance to their credit; this story appears here only because many of us are using Mr. Anderson's windshield wiper blades, and other products, and it's nice to know something about our manufacturers—especially if it is something nice.

●

SNOW MOVIE

● *"Snow Fighters"* is the title of a one-reel dramatized sound motion picture recently released by International Harvester. . . . It pictures an organized plan for snow-moving operations in which municipal, township, county and highway officials cooperate in efficient use of equipment to keep traffic moving. . . . Motor trucks, wheel tractors, road maintainers and crawler tractors, all equipped for snow moving, are shown working the particular type of road or highway for which each is adapted. . . . Prints of this picture may be borrowed free of charge by communicating with International Harvester Company, attention of A. C. Seyfarth, 180 N. Michigan Ave., Chicago, Ill. . . . You'll mention FLEET OWNER, won't you?

●

HATS OFF TO THIS DRIVER!

● So many stories appearing in newspapers to the effect that a certain truck driver "forced" a car off the road, resulting in an accident, personal injury and sometimes sudden death, make it quite refreshing when we read the following account on the *other* side of the ledger. . . . It seems that Glen Zeller was driving his Railway Express truck on a California highway, when he saw the car ahead dash off a curve, knock over a telephone pole and roll over several times before coming to a stop in a nearby field. . . . In another minute the wrecked car was in flames, with all of the passengers, seriously injured, trapped inside. . . . Glen Zeller stopped his truck, grabbed his fire-extinguisher and ran to the rescue. He succeeded in putting out the blaze and with a crowbar pried an opening in the car body through which he extricated the occupants. . . . By this time an ambulance arrived and took them to a hospital. . . . By a strange quirk of fate, the motorists who were thus saved from a flaming death included a Sacramento policeman, who had been driving with his wife and two friends. . . . The officer claimed that his car had been side-swiped by another car (*not* a truck, however) and was thus forced off the road. . . . Our congratulations, Mr. Zeller! . . . And to Railway Express our admiration for employing such capable drivers and for their safety-sense in equipping their vehicles with fire-extinguishers. . . . More of such news-accounts in the daily press would do the truck industry a lot of good. . . . We hope that some editorial writer will reprint this item, permission for which is hereby granted.

WORLD'S FAIR PRE-VUE. . . . Here is the first official painting of the New York World's Fair 1939, showing the $155,000,000, "World of Tomorrow" Exposition as it will appear at the gala opening on April 30. . . . Beyond colorful structures of this metropolis of a New Day rise slender spires of the host city, New York, where lavish preparations are also under way to entertain millionss of visitors this Summer. . . . Fair and City are expected to vie with each other as attractions during coming months, the one offering a glimpse of possibilities for peace and progress in future, the other portraying great achievements of present and rich treasures of past.

DESIGNED FOR THE LOAD
POWERED FOR THE PULL

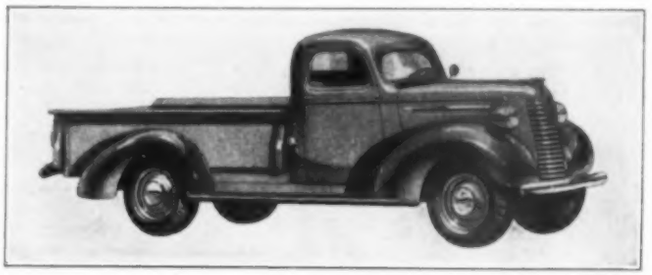
CHEVROLET TRUCKS FOR 1939

Are Fitted to *Your* Needs

For hauling jobs ranging all the way from fleet delivery service up to heavy duty operation, there is a 1939 Chevrolet truck designed to fulfill your requirements. Let your nearest Chevrolet dealer show you the wide variety and versatility of the Chevrolet 1939 line of 45 models in eight wheelbase lengths—from Light Delivery units up to Heavy Duty models of 14,000 pounds gross-weight rating.

Greater Value—at Lower Prices

For 1939, Chevrolet—the world's largest builder of motor trucks—presents the most complete and most capable line of trucks in Chevrolet history. Now there is a model fitted to your particular needs. Now *you* may enjoy the benefits of Chevrolet's famed economy, durability and efficiency—at new lower prices. Find out now why, during the last six years, business and industry have purchased more Chevrolets than any other make of truck in the world.



Chevrolet's Light Delivery trucks—113½-inch wheelbase, one-half-ton capacity—are typical of Chevrolet's design and construction. They are trucks, through and through, built to maintain Chevrolet's long-established reputation for performance, economy and durability.

CHEVROLET MOTOR DIVISION, *General Motors Sales Corporation*, DETROIT, MICHIGAN
General Motors Instalment Plan—convenient, economical monthly payments. A General Motors Value

MASSIVE NEW SUPREMLINE TRUCK STYLING . . . COUPE-TYPE CABS . . . VASTLY IMPROVED VISIBILITY • FAMOUS VALVE-IN-HEAD TRUCK ENGINE • POWERFUL HYDRAULIC TRUCK BRAKES (Vacuum-Power Brake Equipment optional on Heavy Duty models at additional cost) • FULL-FLOATING REAR AXLE on Heavy Duty models only (2-Speed Axle optional on Heavy Duty models at additional cost)

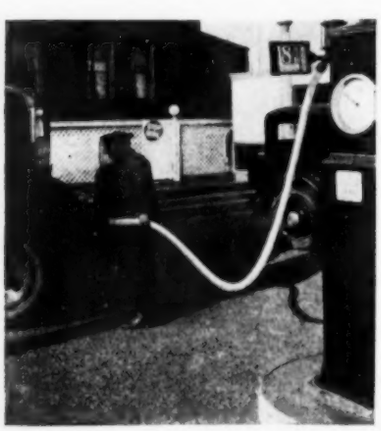
Stripping *the* Thread » »

(Continued from Page 10)

LONGEST BRAKE TESTER? . . . . The longest bar in the world was once the boast of one of Rock Island's (Ill.) citizens. . . . But that city (and times) have changed since then. . . . Today Rock Island claims to have the longest and biggest brake-tester in the world, illustrated here. . . . This equipment is a part of the new Safety Test Station built by the Bear Manufacturing Company in Rock Island, as a "model" station in which to demonstrate and develop their safety equipment. . . . The tester is designed to test all the wheels of any kind of a motor-driven vehicle simultaneously—even the tractor-trailer, as shown.

"HIGH TEST" GASOLINE

● Many people (including fleet men who should know better) are in the habit of talking about "high-test" gasoline. . . . Of course, there *is* such a thing, but it's difficult to drive up to the corner gas station and get it. . . . The joker is that most folks, when referring to "high-test" gasoline, really mean "premium," or Ethyl fuel. . . . Technically speaking, they are incorrect. High-test gasoline is available for your outboard-motor or your airplane; Uncle Sam uses it in his Army, Navy and Air Force, but commercially speaking, automobile gasolines do not generally include *real* "high-test" fuels, as there is little or no need for same. . . . Remember that the large refiners are doing a splendid job in furnishing fuels especially suited for the seasons of the year in which they are sold; they have the proper volatility. . . . Rather than refer to the gasoline you want as "High-Test," "Low-Test," etc., why not order it and refer to it by the correct terminology, which seems to be "Premium-Grade" or "Ethyl"; "Regular"—which can be leaded or unleaded; and "Third-Grade," which usually is *not leaded*. . . . These three grades are generally determined by their difference in octane rating, rather than their volatility, although it goes without saying that the two best grades will have the proper volatility characteristics for the season of the year in which they are sold. . . . Of course, there are *other* characteristics and specifications in motor fuels, besides volatility and octane-rating. But rather than try to figure them out for yourself, it is best to depend upon the reputation of the refiner. . . . You can depend on the *good* refiners to give you the proper grade of fuel for Spring, Summer, Fall and Winter. . . . As in many other things, it seems that you get just what you pay for when you buy gasoline—except for the tax part of it. . . . Next time you hear anyone ask for "high-test" motor fuel, correct him and you will be doing the industry a good turn.



●

DEPRECIATION METER

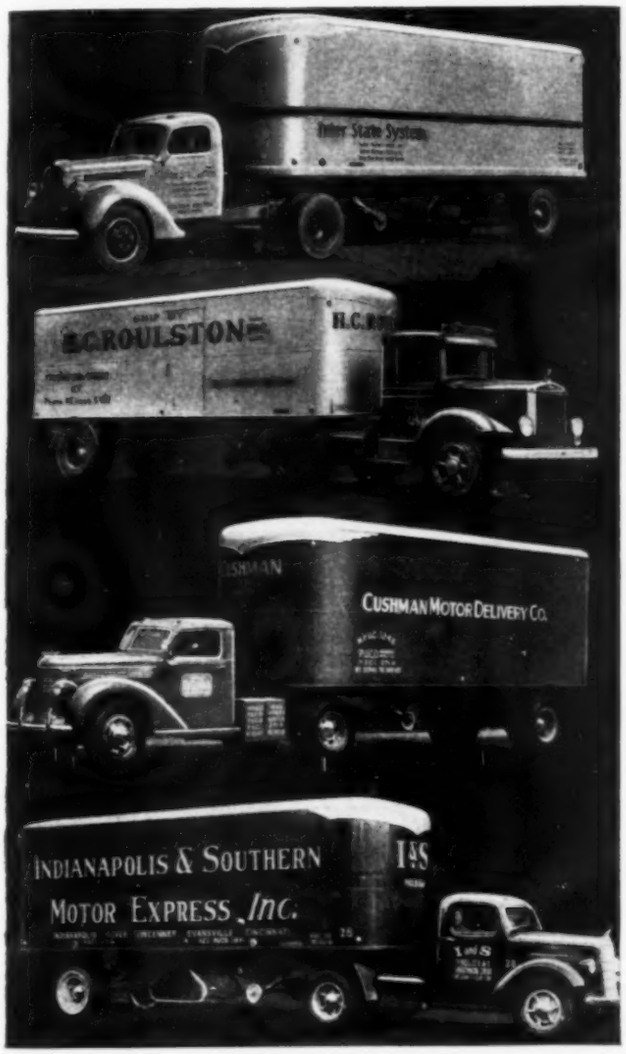
● We read in the papers where some enterprising soul has invented a "depreciation meter", to help you pay for your next truck when its predecessor becomes worn out. . . . As we understand it, the meter has a slot into which you drop a coin, which will permit the engine to run for a certain number of miles, when another coin must be inserted in order to keep it running. . . . It is supposed to prevent the engine from running until the price of wear-and-tear for the "next mile" has been dropped in the slot. . . . Thus, by the time the vehicle is worn out, you have on deposit the price of a new one. . . . While a bit impractical for fleet operation, the *germ* of the idea has merit. In fact, many fleets actually pay out into a fund a certain set sum of money for each mile operated, charging the disbursement to "depreciation" and then when the end of the predetermined depreciated life of the vehicle comes, they have the money in a separate account to pay for the new truck. . . . With the "meter" idea, however, we can imagine the embarrassment of many a truck driver who happens to run out of coins when traveling up some long hill in the middle of the night—or in the midst of a long line of Sunday drivers. . . . The "meter" idea might be "just the thing" for certain motorists who "just can't save a dime", but it's not so hot for fleets. . . . We know of lots better ways; and so, perhaps, do you.

●

NOT DONKEY-DUST

● From South Africa come reports which show what can happen when a government imposes restrictive regulations upon the use of privately-operated motor vehicles in an effort to restore traffic to railroads. . . . Under laws designed to restore traffic to the state-owned railroads in the Union of South Africa, officials were granted the right to stipulate what motor vehicles—whether operated privately or for hire—could be used on the roads. . . . Farmers, merchants and industrialists whose trucks were barred from the roads turned to the use of donkey-drawn wagons as a means of transport. . . . This turn of affairs caused the General Manager of Railways and Harbors to suggest restrictive regulation of donkey-drawn vehicles. In an annual report, he dealt thusly with the situation: *"Previously, wagon-transport operators were mainly of the poorer classes, but of recent months, well-to-do farmers have also entered the field and it is on record that one such farmer has acquired twenty teams of donkeys and is employing them in relays. The firms making use of animal-drawn transport in competition with the railways have all been approached with a view to regaining their traffic for the railways, but the invariable reply is that they are concerned only with making as large a profit as possible for themselves."* . . . Not that we think anyone in *this* country will go back to horse-and-wagon days. . . . However, the thing shows what lengths some people will go to, in seeking protection against persecution. . . . It *can* happen here.

Most HAULERS *use* TRAILERS



. . BIG MAJORITY USE FRUEHAUFS

MEN who earn their living in the haulage business must make every dollar count. They check costs backward and forward—and they use **TRAILERS** almost exclusively.

On the same basis of lowest cost-per-mile, these haulage experts are picking Fruehaufs—using more Fruehauf Trailers than any other make.

SPECIAL FEATURES

Featuring such advantages as double-shackled springs, rubber mounted radius rods, I-beam axle, and the exclusive Type "F" body which gives haulage men a "custom-built" body at a production price, these money-saving Trailers are earning their way for both individual users and fleet owners in all lines of trade.

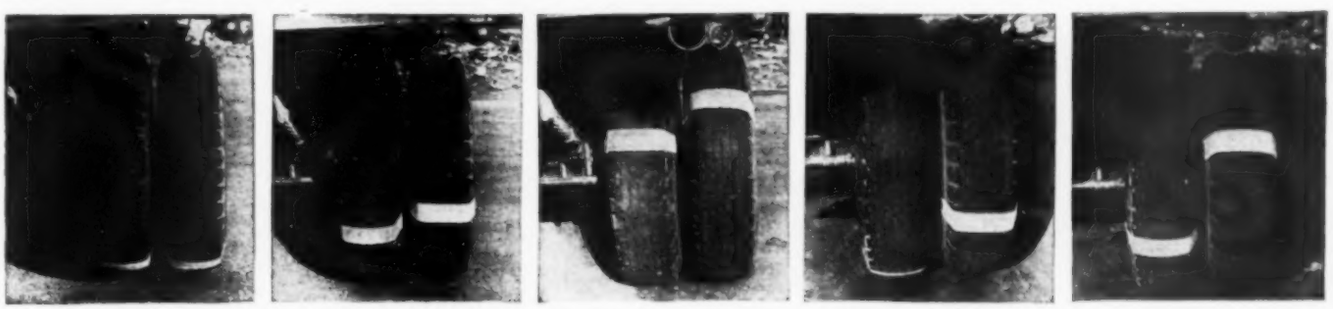
DETAILS ON REQUEST

It costs you nothing to find out how Fruehaufs can be used in your haulage set-up. Simply write the address below and our representative will call for an appointment at your convenience.

World's Oldest and Largest Manufacturers of Truck-Trailers
FRUEHAUF TRAILER COMPANY
10913 Harper Avenue - - Detroit, Michigan
Sales and Service In Principal Cities

USERS REPORT 50% SAVINGS IN TIRE COST WITH DIFFERENTIAL DUAL WHEELS!

● **THE** latest proven advancement in Trailer engineering—Differential Dual Wheels—now offered you exclusively by Fruehauf. These wheels, which can be mounted on your present Trailer as well as on new equipment, offer not only greatly increased tire life but a reduction of approximately 10% in gasoline consumption as well. No change of axle necessary, braking is not affected. These wheels are fully guaranteed. Write for illustrated folder.



This picture sequence shows how Differential Wheels permit the dual tires to rotate independently of one another, compensating for the difference in actual revolutions that occurs whenever dual tires are used.

FRUEHAUF TRAILERS

FRUEHAUF TRAILERS

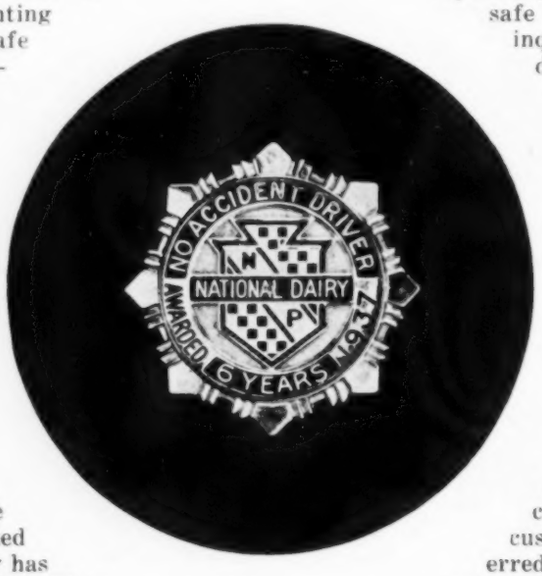
"Engineered Transportation"

REG. U. S. PAT. OFF.

MORE FRUEHAUF TRAILERS ON THE ROAD THAN ANY OTHER MAKE

THERE ARE 424 SAFE DRIVERS IN THIS FLEET

OPERATING a fleet of 550 motor vehicles in the City of Detroit, and the State of Michigan; driving day and night, through rain, snow and fog, drivers of Detroit Creamery Company (Detroit, Mich.) have collectively accumulated a total of 1,207 "years" of safe driving since 1931. This is truly a remarkable record, and shows what can be accomplished when "safety" is given a prominent place in a company's operating program. . . . In support of Detroit Creamery's active program of accident-prevention, Captain Ray Sprague, of Grand Rapids' Police Department, recently visited one of the Company's regular safety meetings. He is shown in the above picture presenting safety awards to some of the safe drivers in this fleet. . . . The Detroit Creamery further reports that 424 men are now the proud wearers of their safe-driving buttons. At the time of this interview, 75 drivers had each completed six years of driving without an accident, and had been awarded the six-year safe-driving pins. . . . Other awards made recently included the following safe-driving badges: twenty-five 5-year, forty-four 4-year, fifty-one 3-year, seventy-four 2-year, and one-hundred-fifty-five 1-year pins. . . . The plan for the prevention of accidents as adopted by the Detroit Creamery Company has the following essential features: (1) The complete cooperation, moral support, and wholehearted interest of all company executives and department heads. . . . (2) A complete knowledge of accident facts. This can be obtained only by a thorough investigation and analysis of every accident. Accident causes are many, but generally result from bad road conditions, weather, defective brakes, careless driving, fatigue, poor judgment, chance-taking, and failure to follow safe-driving practices. . . . . (3) Corrective action. This important feature, based on facts found as the accident's source or cause, is exposed by investigation. Then, corrective instructions must be issued to all drivers. Further, careful supervision is required to see that the employes abide by the recommendations. . . . (4) That all mobile units, in order to operate safely, must be in perfect mechanical condition. All truck equipment must have a careful check-up at frequent intervals. The garage superintendent is the major cog in this part of the organization. It is his responsibility to keep the rolling equipment in first-class operating condition, and the men are requested to report at once any defects as soon as they appear. . . . The Detroit Creamery Company has safety committees formed at each operating center. These groups promote safe driving and sit as courts-of-inquiry where each and every accident is thoroughly discussed. The committee comprises a branch manager, garage foreman, sales supervisors or route foremen, and one or more drivers. Driver representation is changed at intervals in order to imbue all drivers with the necessity for the safe operation of their trucks, and to give them first-hand training in the principles of safety. The committee meets monthly, reviewing any accidents. A driver involved in a preventable accident appears before the committee. His case is fully discussed. He is shown wherein he erred and is told how the casualty could have been avoided. Time off without pay is the penalty meted out to drivers found guilty in more than one preventable accident. As a help to the committee, supervisors must thoroughly analyze each accident happening in their territory and make a special written report to the safety committee. In this report they must determine the unsafe act or condition responsible, and suggest recommendations to prevent similar incidents happening again. The report also shows what action has been taken on the recommendations made by the supervisors. The Detroit Creamery believes that safety education makes for safety-minded employes. (*Please turn to page* 52)



Lighter by More Than A Ton...Costs No More

Truck body—204" long x 92" wide x 101" high. Built of DYN-EL by H. Kaiser & Co., Inc., Philadelphia, for Philadelphia Rapid Transit Company. Largest Public Utility truck in one single unit ever constructed. Built to carry 30-foot steel trolley poles. Contains mechanism for lifting poles into body shelves as well as a pole derrick for erecting them.

The Philadelphia Rapid Transit Company eliminated more than a ton of dead weight—cut gas, tire and license costs—by building their new large-capacity truck light and strong with Dyn-el, Alan Wood's new high tensile steel. A conventional body of this type weighs 7,200 pounds. Using Dyn-el for bulk heads, gussets, super-structure and base, the road weight of the new truck body is 4,235 pounds . . . A saving of 2,965 pounds. Yet, the body of Dyn-el costs no more. Dyn-el is 50% stronger than ordinary sheet steel . . . 60 to 150% more resistant to corrosion than copper-bearing steel (4 to 6 times ordinary steel). The body is 9 inches longer than the same size unit built in wood and contains 47% more cubical material and tool carrying space.

The 48-page book, "A. W." Presents Dyn-el, gives full details of savings in weight and cost possible with this new high-strength, flat-rolled steel. Diagrams, tables and charts cover a wide range of tests and properties. To executives, tables and charts give a quick picture of performance and costs. To engineers, this book gives a quick fabricating and design properties and table of sizes and weights. We will be pleased to send you a copy.

DYN-EL

ALAN WOOD STEEL COMPANY

MAIN OFFICE AND MILLS, CONSHOHOCKEN, PENNA. : : SINCE 1826 : : DISTRICT OFFICES AND REPRESENTATIVES—Philadelphia, New York, Boston, Detroit, Los Angeles, Seattle, San Francisco, Houston, Roanoke, Buffalo, Pittsburgh, Cleveland, Chicago, Cincinnati, New Orleans, St. Paul, St. Louis, Montreal. PRODUCTS INCLUDE—"A. W." Rolled Steel Floor Plate : : "Swede" Pig Iron : : Billets—Blooms and Slabs : : Sheared Steel Plates : : Hot Rolled Sheets and Strip : : Steel Products also furnished in Copper and Alloy analyses.

OPERATING and

THIS FLEET OF FIFTY DAIRY-COOPERATIVE

HERE is an interesting account of a fleet operation in the Pacific Northwest. . . . You'll find their washing, lubrication and maintenance procedure interesting; likewise the floor-plan of their new garage, which appears on the third page of this experience story.—Ed.

ONE with a rural background extending a quarter of a century back, or more, will recall the old "cream wagon." The big, oblong wooden tank of those days was mounted on a wagon chassis that was drawn by a team of horses; it covered a circuit six or eight miles from the creamery and picked up cream from the local farmers.

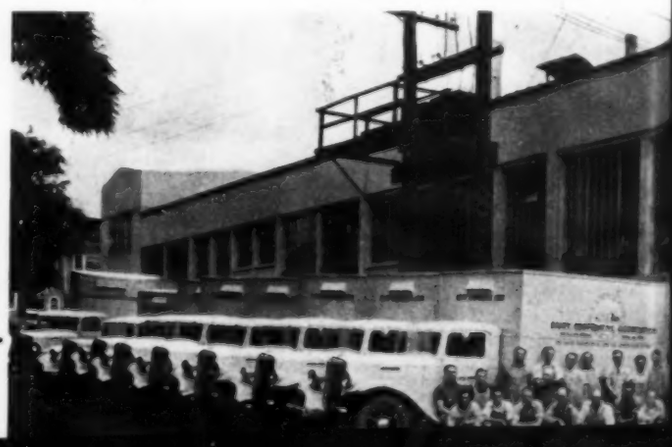
On a hot summer's morning, the kids would stand around with open mouths and watch the driver pour the farmer's cream into the big pail, weigh it on the spring-scales hanging on the back, and put the result down in his little book. Then he stirred up the cream with his pointed skimmer and let a tiny stream run off the point into a test tube, this being a sample for the Babcock test. Then he dumped the pail of cream through a sort of manhole, left the open pail on top of the tank and drove on to the next place. As he drove along, the "dust blew and the flies flew," and the whole outfit might politely have been termed "somewhat smelly."

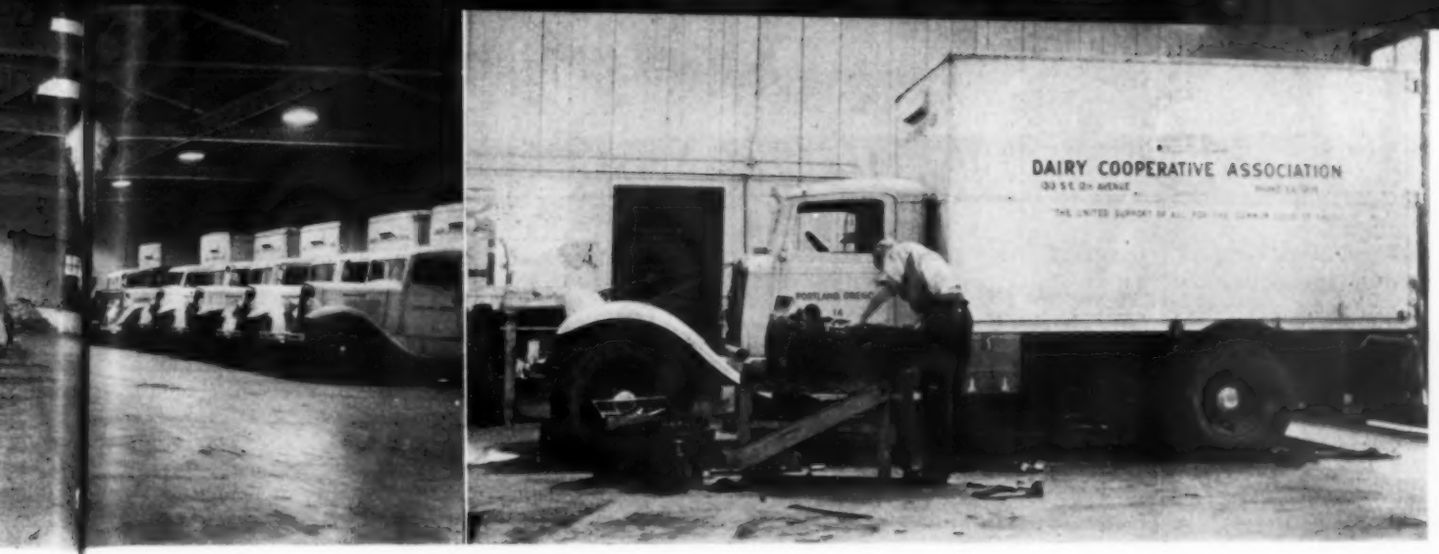
Contrast such type of operation with that of the modern, centralized dairy and milk processing plant, with its highly specialized and completely sanitary equipment, turning out pure cream for table use, pasteurized milk, and manufacturing butter and cheese, with dried skim-milk as a by-product. Collection of the raw material, (the milk) is 'way past the horse-and-wagon days. This leads us, naturally, up to the fleets of mammoth trucks used now-a-days, with their clean, well-kept bodies, which pick up the milk from hundreds of farmers each day.

An example of the utilization of motor trucks in this phase of the dairying industry is furnished by the Dairy Cooperative Association, having a membership of 2,500 in seven counties of Oregon and three in Washington and the plant of which is located in Portland, Ore., approximately the center of the area. This Association is, in turn, a member unit of the Interstate Associated Creameries, a selling agency for nine cooperative creamery associations. Each member creamery carries on a unified program in the territory served by it, for the benefit of 6,500 dairy farmers in 22 Oregon and five southwestern Washington counties.

This particular Dairy Cooperative Association began as a bargaining organization in August, 1931. The present plant, however, was not finished until February, 1934. By November of that year, churning cream pick-up trucks were put into the field to make it possible to personally contact the dairy farmers. Starting with one truck at that time, the number has been increased to 50 at present, picking up cream on 21 routes, and factory and market milk on 35 routes, from the 2,500 members, as well as 500 non-member patrons. Members of the Association now supply 78 per cent of the milk pasteurized for Portland as well as a large portion of the market in Salem, Ore., and Vancouver, Wash.

A large amount of cheese is also made, some years this amounting close to a million pounds. The amount of cheese manufactured, however, varies from year to year, depending on the relative value of cheese as compared with butter and skim-milk powder, the latter being a by-product. Starting with 322,552 pounds of





MAINTAINING

TRUCKS IS EASY, BECAUSE THEY KNOW HOW

An Interview with
Will. W. Henry, Mgr.
Dairy Cooperative Association, Portland, Ore.

butter made in 1934, the volume has steadily increased to 2,093,000 pounds per year, which was 1937's total.

Truck drivers for the Dairy Co-op weigh and sample the cream, having qualified as licensed testers with the State Department of Agriculture. When working with milk, however, the drivers simply pick up the filled cans from the farmers and leave their own empties, each farmer having two sets of cans with his number on them. All weighing, sampling and testing of milk is done in the central laboratories, except market milk, which is weighed and sampled at the pasteurizing plant when delivered and the testing is done by the State Department of Agriculture in this case.

A fleet of fifty attractive trucks is operated by the Association, all but three being used for milk and cream. Two trucks are used for delivering feed to members, while one picks up feed from members, when they have it to spare, or from the dock if a water shipment comes in. The Association does a large feed business and has its own feed mill, recently completed, a 15-ton semi-trailer also being used for this end of the business.

A large, modern garage has been built on the same property as the feed mill, to house and service the fleet of trucks. This garage has many interesting features, of which you will learn, later in this article.

The fleet shows a good attempt at standardization of vehicles, 38 of the vehicles being of one make—International, of which there are twenty-six 1½-tonners, ten 2½-tonners and two 3-tonners. Other vehicles in the fleet include two Diamond-T 2½-tonners, seven Federal 2½-tonners, two Chevrolet 1½-tonners and one Indiana 2-tonner.

If you wish to go out with a "milk-gathering" truck and see, first-hand, how the service compares with that of the "cream-wagon" of earlier days, it is necessary to be at the garage by 4 o'clock in the morning. The drivers begin to arrive at that time and filter in up to 5 o'clock, depending on the length of their routes. Here comes Johnny Trout. He will be a good one to go with, as he has been picking up milk and cream for the past 14 years, and should, therefore, know something about the business. He drives one of the big Internationals and is just getting ready to climb in. His route is a circuit west of Portland covering about 80 miles, and he will be back by 10.30 in the forenoon.

There is no waiting around. The truck is all fueled and ready to go, with its nose pointing out to one of the central driveways. All he has to do is to stop at the gas pump station and sign the slip for his gasoline and oil, which have been put in after the truck came in, the day before. The "rig" is all clean and shining, and the interior and exterior are in keeping with the sanitary requirements of modern dairying.

Johnny's truck has a load of 100 empty 10-gallon cans, which he had arranged to the best possible advantage after his return on the day previous. You hastily figure that, there having been no inflation of the unit of liquid measure, "a pint is still a pound the world around." Therefore, allowing for the weight of the cans, he is going to come back with a load of

(Please turn to page 18)

about 10,000 pounds. The truck has doors on the right side and on the rear-end and is just about as full of empties as possible, stacked one tier above another.

Loading one of these trucks is not as simple as it looks. If there could be an aisle down the middle and if the cans could be stacked on either side, it would be comparatively simple. But such a waste of space cannot be permitted. With empty cans completely filling the truck, to be taken out a few at a time and replaced with full ones; with each farmer to get his own particular numbered cans back, — *there* you have a problem that takes *some* thinking, if you don't want to unload the whole mess of empties at every call. At best, it takes quite a bit of rehandling and for a few minutes at the beginning of every stop, there is a noise resembling that of a boiler factory while the driver is arranging the "suits."

Finally all is clear to throw in the full cans and put them in their proper row and tier in the forward end of the truck. The filled cans weigh a hundred pounds apiece and have a handle at each side of the neck. Johnny takes them and with a sort of roll, skip and flip, in they go, as easy, apparently, as though they weighed 20 pounds. Everything goes forward with speed, for Johnny also must allow for just the "polite amount" of time for gossip with the farmer. With all these things to do, he cannot be bothered with a truck that is not operating properly, of course.

To leave Johnny's time wholly free for the solution of his mathematical can arrangement problems, for his unloading and loading, and for his good-will personal contact work with the patrons, the service department of Dairy Cooperative sees that his truck is kept in the best of condition at all times.

When each driver arrives in the morning, he finds his truck all washed and serviced, ready to pull out. As fast as the trucks come in they are gassed and oiled and put into their proper stalls. Greasing is done in the shop regularly, once a week, and the transmissions and differentials are also checked at this time. This is done regardless of the mileage run, a regular schedule of trucks being laid out for each day of the week.

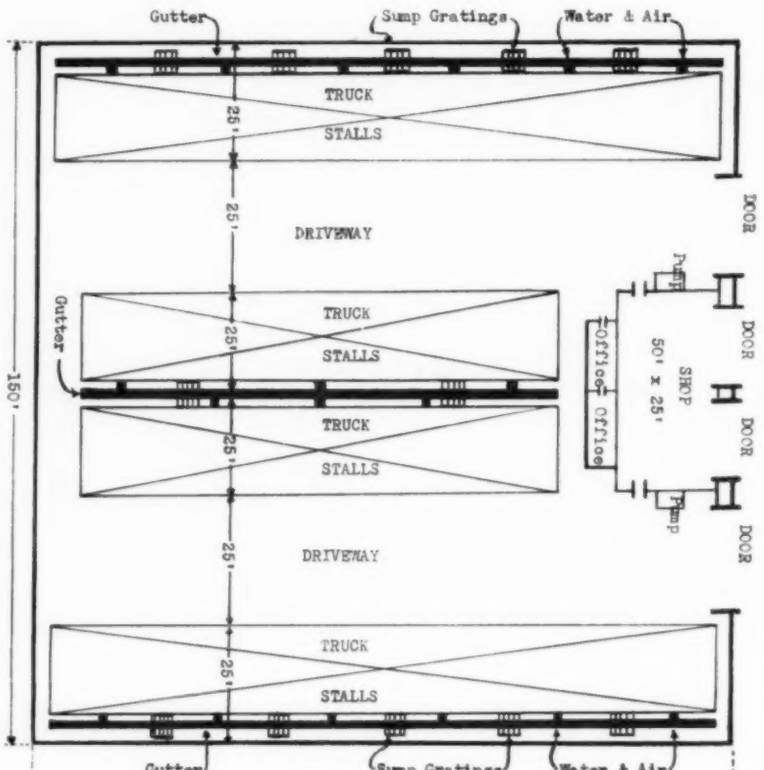
Two gasoline and oil stations are provided, one near each exit. Each truck is fueled when it comes in and the mileage is also recorded. As the driver is pulling out in the morning, he stops at the station, the mileage is again checked and the foreman on the floor has him sign the gasoline and oil ticket. Three copies of this ticket are made on an ordinary order-writing machine. One is left in the machine, one goes to the driver and the third goes to the files for later audit.

It is not necessary for the driver to make any gasoline purchases while out, unless some emergency should arise. In that case, or if he should have to buy some part such as a spark plug, in emergency, the item and cost is entered on the trip slip when he returns. As a further check, at the end of each day, the total readings of the two gasoline pumps are checked against the total of the gasoline slips for the day. By means of this system, the performance of every truck as to gasoline mileage and oil consumption is readily obtainable.

Every truck is washed once a day *in its own stall.* There is no wash-rack in the garage; this garage is unique from that standpoint. The simple arrangement is shown on the plan of the garage, (see diagram). The garage is approximately 150 by 150 feet in size. The truck stalls are in rows, each truck having a number, with an individual stall numbered to correspond. There is a row the full wall length on each side, the trucks standing with their rears to the wall; there's also a double row down the center, the two lines of trucks standing with their rears together. Between the outer and inner rows are two driveways, each about 25 feet wide and slightly crowned.

Adjoining each side wall and extending the full length of the building, there is a gutter built into the floor, measuring about six by six inches in cross-section. This gutter takes the wash water draining from the sloping floor and delivers it to several grate-covered sumps. Complying with the city ordinance,

(*Please turn to page* 20)



FLOOR PLAN (approximate layout) of the new Dairy Cooperative Association's garage, completed last June. . . . This rough sketch lays special emphasis on the arrangement for washing the trucks in their own stalls, without taking them to a wash-rack. . . . Note the gutters, sump-gratings and water-and-air stands.

Studebaker Reliability!

Building Nation-Wide Fame for the GREATEST TRUCKS IN STUDEBAKER HISTORY!

Studebaker reliability was famous before most of us were born. This fame was built on the same foundation of quality that makes these great 1939 Studebaker Trucks appeal to experienced operators.

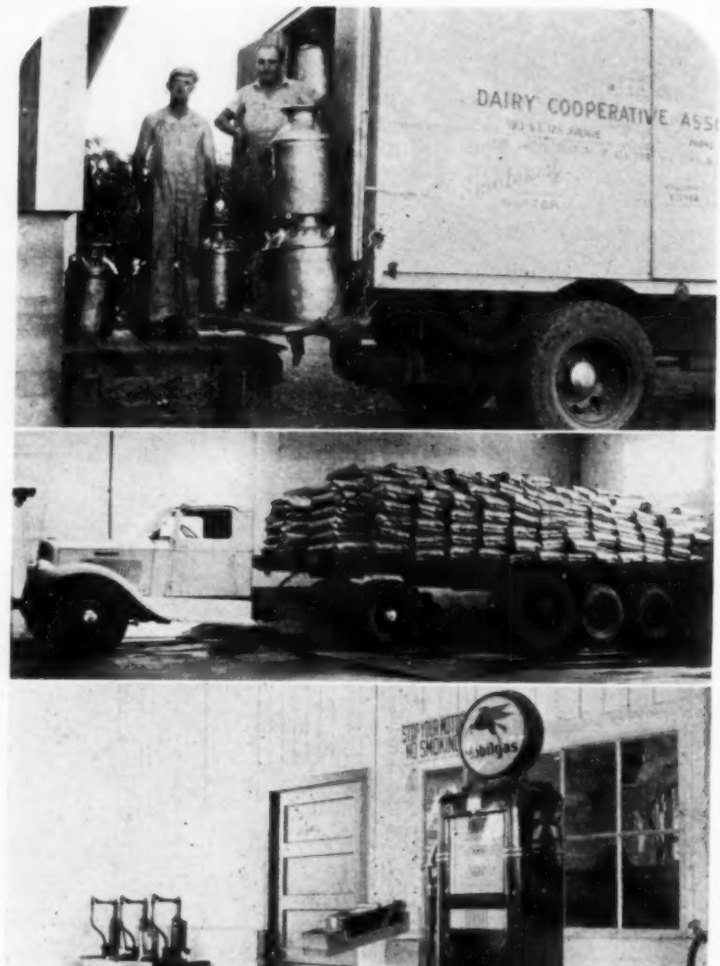
Built in both Cab-Forward and Standard models, ranging up to 20,000 pounds in gross rating (32,000 pounds gross train rating). Sold and competently serviced throughout United States and in foreign countries. See your Studebaker dealer! He can save you money!

THE STUDEBAKER CORPORATION
TRUCK DIVISION
SOUTH BEND, INDIANA

the water from these sumps is delivered to the sewer by syphons, the heavy material settling to the bottoms of the sumps, to be removed at intervals. Through the center of the building is a similar gutter, with sumps, which serves the two inner lines of trucks. These gutters, gratings and sumps are clearly indicated in the plan of the garage, on page 18.

Water for washing is obtained from short riser-pipes with hose couplings, which are brought up beside the supporting columns of the building, there being one riser for each pair of trucks. The general piping system is laid in the concrete floor. Along with the risers are also brought up the pipes connected to the sump syphons, to automatically start them through the action of the wash water when it starts to flow, somewhat on the principle of a steam-injector on a boiler.

Down from above on each column carrying a wash water riser comes an air pipe from the central compressor system in the shop. This provides compressed air for inflating tires and for blowing out dirt when necessary, in cleaning.



THE TOP picture shows something of the can problem. The truck is full of empties and the farmer's full cans must be placed at the forward end and his empties taken out. . . . CENTER picture shows a different kind of a load—a 15-ton semi-trailer loaded with feed and ready to go. . . . LOWER picture shows one of the two gas-pumps and oil racks in the new Dairy Cooperative garage. . . . As the driver leaves in the morning, he signs for the fuel and oil and also reports his speedometer reading, so that the records will be right.

Commenting on the above method of washing, Sam Graham, fleet superintendent, said: "We adopted the plan because we believe it is an economy, as against wash-racks. To manipulate a truck from its stall to a rack would take a man almost as long as it would to wash the body. It would also take about half a gallon of gasoline on each transfer, to say nothing of the danger of bumping fenders and otherwise scratching and marring the trucks. With this system, one man can easily do all the washing, using an ordinary hose-brush. The trucks are washed every day with plain water, and with soap and water whenever an accumulation of grease-film makes it necessary. We manufacture our own soap, by the way from our own formula."

Repair work is done in a 25′ by 50′ repair shop located in the front of the building, with double doors taking up the whole front. Body work and reboring are not undertaken here but are done by outside commercial shops. Painting is also done by outside commercial companies, on a schedule of once every 18 months per truck.

In the case of reboring, the outside company sends its equipment to the Cooperative Dairy garage shop and does the work there. Equipment in this shop is not elaborate, but includes a complete line of hand tools, one double hydraulic hoist, lifting at both ends, and a modern air-compressor unit, driven by a 1½ h.p. motor.

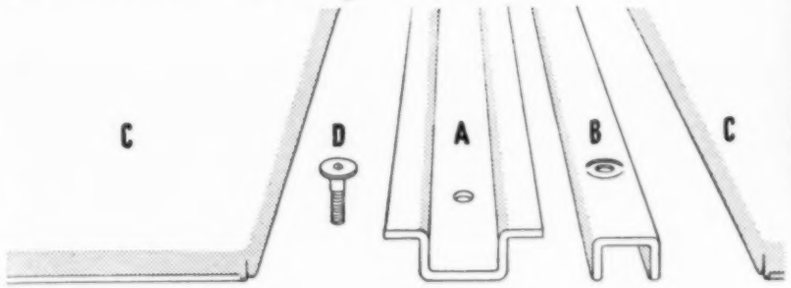
A repair order must be issued on every job in the shop or on the floor, giving the number of the truck, speedometer reading, motor number and date, with space for entries for all time consumed and materials used. Three men are employed regularly—two mechanics and a greaser. With the exception of the reboring and body work, they are able to do everything necessary to keep the 50 trucks in first class operating condition.

The performance records of all trucks are carefully analyzed against the shop orders. General overhauls in this fleet are not made at set intervals of either time or mileage. They are made only when found necessary, due to general wear or because of too frequent repairs as indicated by the shop records.

Tire records are kept in one of the standard Goodyear tire record books and do not pass through the auditing department. All details as to performance, repairs and mileage of each tire are recorded in the usual manner, and having a direct bearing on future tire purchases.

(*Please turn to page* 53)

"This revolutionary all-steel material cuts truck body costs"



Harvey B. Lindsay, President of Dry-Zero Corporation and inventor of Lindsay Structure steel material.
Lindsay Structure is an exclusive product protected by U. S. Patent 2017629 and Patents applied for.

Lindsay Structure is an entirely new type of steel material especially suited to the construction of modern truck bodies.

It offers truck operators direct savings in construction, maintenance, and body weight. It is made available to the transportation world through recognized truck body builders.

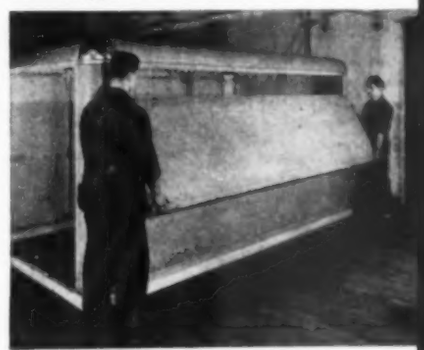
This revolutionary advance in body construction replaces cross-braces, bolts, rivets, and welding. Instead, the Structure is "drawn together" under even tension by means of patented framing, steel sheets, and lock screws. This creates a unique Super-Stressed-Skin all-steel construction.

Lindsay Structure allows lower costs in fabrication. Over-all weight is reduced because lighter weight material is used for given strength specifications. This means that for a specific tonnage requirement, a Lindsay Structure body is more economical to build and operate.

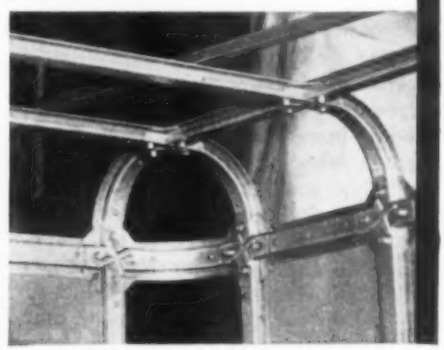
With this Structure, maintenance costs are lowered because damaged framing and panels can be replaced in a few minutes. Replacement parts are inexpensive and always available. Repairs are made with standard sizes, without long delays. Furthermore, repair demands are minimized, because the tensioned Structure has an exceptionally high resistance to vibration stress.

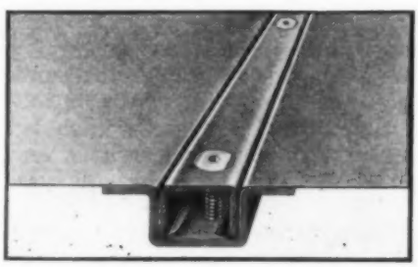
The qualified truck body builder requires no special training for construction or repairs. Standard shapes and sheets are available in a wide variety of sizes, allowing construction of any size body.

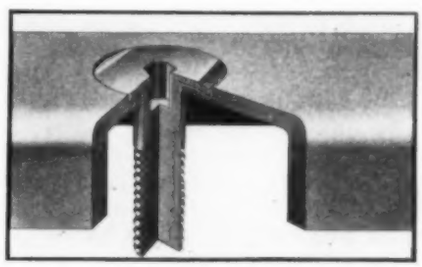
Lindsay Structure materials are manufactured by Dry-Zero Corporation. Write for Lindsay Structure bulletin giving complete information.



Above—Partially completed Lindsay Structure truck body with panel going into place. Below—Detail of framing at top corner. All parts are standard.







The basic elements of Lindsay Structure are shown at top of page: A—flanged frame; B—tensioner; C—steel sheets with drawn edges which fit inside the flanged frame; D—socket lock screw. The tensioner grips the edge of the sheet. The socket screw draws the tensioner into the frame. The screw locks into depressions in the seat. Directly above are: frame and sheet assembled; detail of lock screw. Write for the Lindsay Structure Bulletin for additional information.

Send me free Lindsay Structure Bulletin.
Name ----------
Company ----------
Street ----------
City, State ----------
243

Lindsay Structure bodies are sold by selected truck body builders.

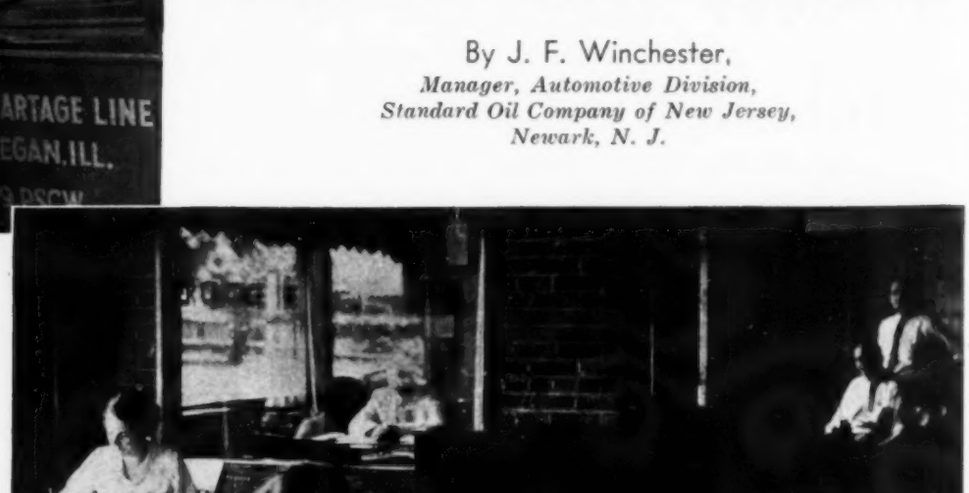
LINDSAY STRUCTURE

Dry-Zero Corporation
Chicago: 222 North Bank Drive
New York: 60 East 42nd Street

How to Keep

COST RECORDS

By J. F. Winchester,
Manager, Automotive Division,
Standard Oil Company of New Jersey,
Newark, N. J.



THESE pictures, typical of a fleet which pays close attention to cost-keeping, are published through the courtesy of Webber Cartage Line, Waukegan, Ill.... In the trucking-for-hire business, especially, the proper keeping of costs is vitally important.... These photos, of course, have no connection with the article accompanying. . . . We just put them in to dress up what would otherwise be a page without pictures.—Editor.

(A Bit of Timely Advice on an Important Subject)

IN EVEN the most prosperous economic periods the astute managers of modern industry pay unrelaxing attention to the detailed costs of operating their businesses They know full well how disastrous can be leaks or loopholes or unjustified costs of individual operations. Consequently they seek to have at their disposal a record of all costs. If this is so in so-called "good times", how much more so should it be in periods when competition is keen and business levels are below previous peaks?

Today all business men who intend to remain in business watch their costs of operation. By this I do not mean that they merely compute the total cost of conducting their business. That alone is insufficient. On the contrary, they watch the many individual items of cost which make up this total. In this way they can often determine where their total costs are being added to unnecessarily and where costs can be pared.

This business of costs is something that merits the serious attention of every one who operates a truck fleet. Every such executive should know specifically just what items go to make up motor vehicle operating costs.

He should endeavor to break down his costs into fixed costs and variable costs Those items which remain constant throughout the year are fixed charges which can be anticipated year after year. The costs which change from time to time cannot be accurately estimated in advance. These are the variable costs.

Every fleet operator should see to it that his costs are figured under these two separate divisions. Under fixed costs he should include the following: 1—Depreciation; 2—Driver's Wages; 3—Helper's Wages; 4—Insurance; 5—License; 6—Taxes; 7—Storage; 8—Administration Overhead.

The variable costs should include the following items: 1—Repairs; 2—Tires; 3—Gas and Oil; 4—Miscellaneous.

System should be the order of the day in keeping cost records. It is advisable first to keep such records by trucks. Each truck should have its own costs tabulated and recorded. Moreover, these records should be so devised per mile to operate each vehicle and what is spent per mile for such things as oil, gas, tires and wages.

The records should also be so devised as to permit the operator to ascertain readily just what he spends to operate each vehicle per month and then they should make available the accumulated costs per vehicle for the year to date.

The institution of an adequate system for this purpose is not easy. It requires a considerable amount of planning and involves the use of special printed forms. Each unit in the fleet, for instance, should have a daily motor vehicle report form on which is provided space for information as to the number of the vehicle, its type, tonnage, the hours it was used and the mileage traveled daily, together with a description of the work this unit performed in that one day. This card should also contain notations of tire

changes and their costs; or, a separate tire record.

The reverse side of the card can be employed to note information on the amount of oil and gasoline used, the cost of repairs, repair material used, washing, greasing, etc.

The installation of a system of this type will give the operator a complete daily report on the various costs entailed in the operation of each truck in his fleet. At the end of every month these charges can be posted on another card and charged against the truck. In addition, this other card will contain space for such other charges as depreciation, taxes, licenses, wages and insurance.

At the end of each month this material may be transferred from the individual cards for each truck to a master sheet which will provide a complete record for the entire fleet. Such a sheet should contain information on the number of the car, the date it was installed or placed in service, its size, its make and its type. Then, too, it should contain a record of repair costs for the current month and for the year to date and a record of tire costs, both for the current month and for the year to date.

Next in order comes a record of the days the truck was run, the days it was idle and the days it was in the shop during the month. Also on this record will be a notation of the miles run per month, the miles run per day, the gasoline used, the miles per gallon, the oil used and the miles per gallon of oil.

Other columns can be established for information on performance, such as the number of units delivered per month, per day and the total number of loads per day. A final column may be devoted to memoranda and to explaining any figures which require elaboration or explanation.

One can readily appreciate that such a procedure as this will give the operator a comprehensive picture of his operating costs per truck, together with important and valuable data on its performance during the months. Such a report can be also rendered according to cities, divisions, classes of trucks, types of operation, ages of trucks or sizes of trucks.

To the uninitiated, or to those persons who casually belittle the value of this so-called "paper work," this may seem like a lot of record keeping. In a way it is. But it has a distinct use and the proper employment of these records will tell a story which could not be obtained in any other way.

Such a system will go far towards providing the answer to whether an operator should use two small units or one large unit for a given type of operation. All one has to do when confronted with this question is to turn to the record and see what the two small units have previously cost to operate. The record will reveal what gasoline mileage they have been getting, what their repair costs have been, how many units they have delivered, the number of loads per day and the total of their fixed costs.

Next, one can turn to the records of a heavy unit which has been in a comparable operation and, on the basis of similar figures, recommendations may be drawn up.

Not only should every operator know what his costs are to enable him to conduct his business soundly, but today, cost records are a necessity for all who engage in Interstate Commerce work. They are required as a part of the reports which must be submitted to the ICC. As the work of the Interstate Commerce Commission progresses, in all probability rate applications will be justified upon actual operating costs, instead of being forced to follow so closely those of the rail structure, which seems to be the general tendency of the trucking industry at the present time.

An illustration of this point is seen in the fact that the Commission recently called upon all in the common and contract carrier business doing a gross business of $100,000.00 per year in the Eastern section of the country to submit their financial statements so that the ICC could make a detailed study upon which to establish a rate structure for all types of commodities.

There is nothing hit-or-miss about this. Guess plays no part in such a decision. We choose the two units or the one unit, as the case may be, on the basis of *conclusive figures* which prove the economy and the efficiency of our decision.

This is just one reason for the keeping of adequate cost records. There are many others and in the course of a year or so the truck fleet operator, whether he

(Please turn to page 53)

TYPICAL DISTRIBUTION OF OVERALL OPERATING COSTS *

THE TABLE below shows the distribution of the various classifications of costs that go to make up the over-all cost of motor vehicle fleet operation. . . . These data are based on various authorities and types of fleets, as shown below.

Operating Cost in Per Cent of Total:

	A	B	C	D	E	F	G	H	Average
Overhead	7.7	23.1	14.2	10.8	8.8	11.2	4.82	11.2	11.5
License & Insurance	5.6	5.6	14.8	9.3	8.7	11.0	12.90	5.6	9.2
Depreciation	21.0	12.2	19.7	20.1	19.4	24.0	17.77	28.3	20.3
Gasoline	19.3	14.5	15.3	32.5	38.5	28.2	33.70	22.0	25.5
Tires	9.4	4.1	10.7	4.4	5.2	4.3	7.97	7.5	6.7
Lubricants	2.4	.9	3.8	6.9	5.9	6.7	3.24	4.3	4.3
Servicing	19.5	10.2	9.7	6.2	3.0	5.8	1.65	8.1	8.0
Repairs	15.1	29.4	11.8	9.8	10.5	8.8	16.96	13.0	14.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

A—Oil Co. Survey (Many Fleets' Avg.)
B—Large Public Utility Fleet
C—Scattered Fleet of 400 Vehicles
D—Scattered Fleet of 300 Coupes
E—Scattered Fleet of 450 Cars
F—Fleet of 300 Half-Ton Pickups
G—Autocar Company's Report (Adjusted)
H—"Composite" Iowa Automobile Costs

* *THE ABOVE DATA were submitted at the recent West Coast S.A.E. Transportation and Maintenance Meeting, by E. W. Templin, Automotive Engineer, General Plant Division, Los Angeles Department of Water & Power. . . . The purpose of this presentation was to promote a discussion of the general subject of Fleet Operating Costs.*—EDITOR.

Modern retread shop, typical of concerns which do retreading work for fleet operators especially.

Note the many different types of moulds used, producing all kinds of tire treads to suit each purpose.

A "FLEET OWNER" SURVEY ON

RETREADS

•

IN WHICH 311 fleet operators, having an average of 148 vehicles each, give their recent experiences with Retreaded Tires. . . . Many are still doubtful as to whether it pays to use 'em or not.

By H. Clay Fischer, Editor

LAST OCTOBER we published a *new* questionnaire on Tire Retreading. Believe us when we tell you that it was by popular demand. We were just about swamped with letters from readers (many of which we published on our *"Letters to the Editor"* page) asking us to give them some up-to-date information on the subject of Tire Retreading and Recapping.

Being quite obliging (although sometimes we are a bit slow in getting around to things), we doped out a new questionnaire, Number 91 in our series, and published it in our October issue. We received 311 blanks back, filled out—completely or incompletely. After going through all of them very carefully, we were able to draw four very definite conclusions:

(1) That the tire rebuilding industry seems to be sorely in need of some *standardized* method of naming the various tire retreading processes. . . . One retreader will call his process a "full retread"; another will call the same type of job a "partial retread." One retreader will call a certain type of work a "re-cap," while another will call it a "top-cap" and still another a "partial re-cap." Of course, local retreaders will tell you that "the other fellow" is all wet, that *theirs* is the best process to use, and that all others are out-of-date. We are not in an especially "knocking" mood, but we think that it behooves interested companies to get together and set up a standardized procedure, with standardized terminology. Such work could go even further, and determine standards on tread thicknesses, tread widths and other "measurable" data, including how much old rubber is to be buffed off—when and if. Then, if we were to make another survey we would be able to give you a more intelligent report.

(2) That retreading (by various methods) seems to be proving satisfactory in many fleets, and for various types of operations, provided a *good* carcass is used, *quality* materials and workmanship are employed, and that proper *attention* is paid to inflation pressures, both before and after the tire has been rebuilt.

(3) That re-capping, as a process, seems to be preferred, over full or partial retreading. . . . It is difficult for us to give you a *good* definition of these two terms, because there seem to be so many different systems in use. We would not even be safe in saying that a re-cap is a job where a minimum amount of tread-width is applied, as contrasted to a full "shoulder-to-shoulder" job, sometimes known as a retread.

(4) That retreaded tires (by various methods) do *not* seem to stand up under *all* conditions of operation. . . . Many failures have been known to occur where high temperature, high speeds, heavy loads or bad roads were encountered—any or all of these. However, it is only fair to point out that *some* fleet operators report having success with retreaded tires under all of these various conditions. (See comments, pro and con, on page 28).

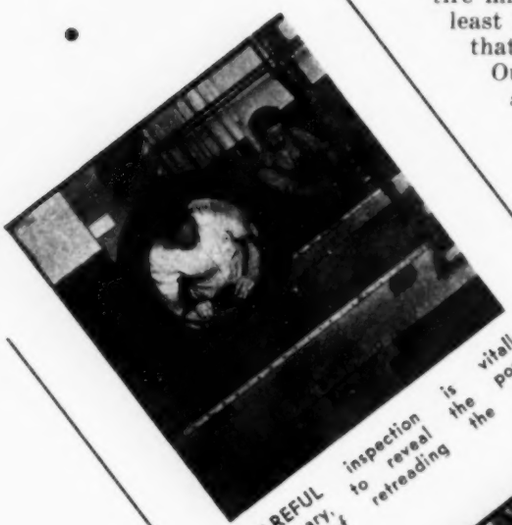
So much for the conclusions. This survey did *not* attempt to discuss or determine the relative merits of retreading and recapping—nor the relative merits of

A fountain of Youth for Your Truck Chassis

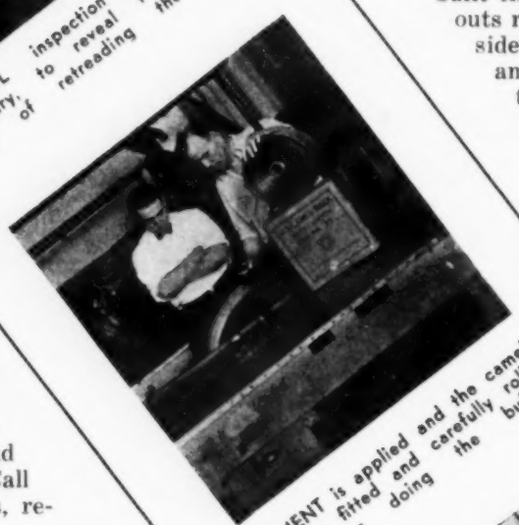
● The Cummins Dependable Diesel adds to the life of the truck chassis. Its high torque at low rpms. removes the need for reefing, bucking or frogging. It removes the necessity for slipping clutches, clashing gears and adding shearing strains to transmission and differential. This means longer chassis life . . . less chassis maintenance . . . and that's another reason why shrewd fleet operators SPECIFY Cummins Dependable Diesels in their new trucks. Cummins Engine Company, 1116 Wilson Street, Columbus, Indiana.

Milk transportation demands unfailing power. Here are two of the five Cummins Diesel-Powered trucks owned by C. J. Fayen, well-known New York milk trucker.

CUMMINS
Dependable
DIESEL
PIONEER IN MODERN DIESEL DEVELOPMENT



CAREFUL inspection is vitally necessary, to reveal the possibility of retreading the tire.



CEMENT is applied and the camelback is fitted and carefully rolled on, after doing the buffing.

CURING must be done at carefully adjusted temperatures, pressure and the proper time-length.

any system, process or procedure. All figures in this survey, which we are now about to digest for you, therefore, will refer to tires that are equipped with a second (third or fourth) tread. Call them new treads, retreads, recaps or what you will.

Naturally, no survey is much good, unless those participating in it have had actual experience on the subject in hand. Of the 311 fleets replying, 242 operators have had *recent* experience with retreading, recapping or both; 6 fleets have just started having tires retreaded; 12 had tried it and have discontinued it. The balance, 51 fleets, have had no experience, but were *interested* in learning more about it, so they tore out our blank and mailed it in to us, and were furnished copies of the confidential tabulation, as were those who volunteered the "meaty" information.

The first question was one that *all* of us are interested in—mileage. We asked, *"What average mileage do you generally get from retreaded tires?"* . . . More than half of those having experience with rebuilt tires, reported that they obtained *less* than new tire mileage—153 fleets to be exact. On the other hand, 17 fleet men reported that they actually get *more* mileage from retreads or recaps than from new tires, while 63 operators reported getting mileage *equal* to new tires. There were 78 which came under the heading, "No answer or no experience."

Having heard glowing accounts (from local retreaders) as to how much mileage they guarantee to their customers, we next asked, *"What mileage is generally guaranteed on retreads or recaps?"* . . . "Less than from new tires" is guaranteed to 104 fleets. "Equal to new tires" is guaranteed to 90 fleets. "More than new tires" is guaranteed to 7 fleets, the balance not answering or having no experience, except for 17 operators who reported that no guarantee is given.

It is interesting to note that although more mileage than from new tires is *guaranteed* to only 7 fleets, 17 operators are actually *getting* more than new tire mileage from their rebuilt tires—which leads us to believe that in at least 10 fleets, better mileage is being enjoyed than is promised. Or, isn't that the way to figure it?

Our next question asked, *"Do rebuilt tires stand up under your most severe operating conditions?"* . . . 135 operators reported that rebuilt tires *do* seem to stand up under their most severe operating conditions, while 107 reported that they *do not*. . . . Two of the boys said, "Recap yes; retreads no"; two more of them said they had not been able to find out yet; and another said "Sometimes." . . . Sixty-four did not answer or had no experience. These answers, together with many of the remarks which you will read later in this article, led to our making conclusion number four, at the beginning of this article. Next came the logical question, *"What troubles do you have with retreaded or recapped tires?"* Tread separation was reported as the main cause of rebuilt tire failure, with road trouble due to blowouts running a close second. Next in line came sidewall and carcass failure, rapid tread wear, and short-lived casings. . . . Several operators also reported that it is difficult to determine whether or not a casing is fit for retreading; several others reported retreads as being unsatisfactory on front wheels; some on rear wheels; some for heavy loads; some at high speeds; some in hot weather, etc. These reasons are enumerated, in full detail, on our confidential typewritten tabulation, furnished to those fleet men who participated in this survey. No doubt these

(*Please turn to page* 46)

12% MORE GASOLINE MILEAGE
ON PACKER'S FLEET
• Showing a 12% saving in gasoline put a feather in the cap of the garage foreman in a midwestern packing company fleet. To the Standard Automotive Engineer who helped make this saving it was all in the day's work.
Together the Engineer and foreman first checked various engines in the fleet that were showing poor gas mileage. They tested every known source of possible waste with scientific instruments. Weak condensers and coils or worn distributor points were located. They found the cause of carburetor gumming in some units. When this thorough examination was completed and the corrections had been made, fleet costs had to drop.
Savings up to 20% in total operating costs have been made through this service, even in well kept fleets. Every fleet operator in the middle west can have this same service. It costs nothing. Engineers are located in 30 Standard Oil (Indiana) offices to answer your call. Just write 910 South Michigan Avenue, Chicago, Illinois and ask for the Engineer nearest your garage.
Burned distributor points are just one of the 17 factors that a Standard Automotive Engineer checks to secure the greatest economy in mileage and maintenance for you.
Copr. 1939, Standard Oil Co. (Ind.)
STANDARD OIL COMPANY (INDIANA)
AUTOMOTIVE ENGINEERING SERVICE
LOWERS MILEAGE COSTS

REMARKS VOLUNTEERED *by* FLEET-MEN *on* RETREADING

FAVORABLE:

"Have had fair success with retreading in slow-speed city work."

"Where air-pressure is watched, heavy-duty tires can be retreaded, with good service of ½ to ⅔ of original mileage."

"We recap only, and save quite a bit in a year's time. Have not had very good results with retreads, as they blow out and the tread comes loose."

"For retreading to pay, the cost must be 50% of new tire cost."

"Trying retreads. Have a set with 20,000 miles; so far, so good."

"Recaps give us satisfaction on lumber-carriers that are heavily overloaded."

"Using a large number of retreads on front wheels only, on long distance trucks. On local trucks we are using retreads on front *and* rear wheels."

"We get 26,000 miles from new tires; 25,000 from retreads; and 15,000 miles more after regrooving them."

"Either retread or recap will do in slow-speed work equally well. Recaps are better for heavy-duty, high-speed work."

"Have found that recaps give better mileage than full retreads."

"Have been retreading for 2 years. Success depends on retreader doing quality work. Tires should be removed before carcass is damaged. Recently turning to recaps."

"If you can get best grade of materials and workmanship, retreading is o.k."

"Find retreads and recaps operate o.k. on various types of delivery work."

"Are using recaps on semi-trailers used in city and inter-city hauling; we take smooth tires off our tractors and have them recapped for the trailers; new tires only are used on tractors."

"As safety is first consideration, we lean towards recapping, as the recappers are more fussy in rejecting casings."

"Retreading or recapping is o.k. on a carcass that is not too old, or on one that is not 'aged' due to low annual mileage. No good on weak or defective tires."

"Have start-stop tires and send them to factory for retreading, which is o.k."

"Use retreads on moderate speed outfits, slower trucks, and graders."

"We choose the better grade of retreaders for our work and depend on their judgment as to class of rubber to use and whether casing should be retreaded or recapped."

"If retreader is fair and careful to only choose good tires for retreading, all of us will be better satisfied with retreading."

"Had good results on recapping in last year. Have been 'off' retreading for the last seven years."

"Often retread same casing twice, using our own tires only."

"75% of our tires recapped once; 25% unfit for recapping. The 75% give same mileage as a new tire and are then discarded."

"We have our own equipment and recap 16 tires a day, keeping full records."

"Saving effected when using on front wheels and on light work only."

"Believe the success of retreading lies in the curing. Many good brands of camel-back on the market. A good retread job can be ruined by poor curing."

"Recaps give good results on house-to-house delivery work."

"Believe in retreading, but every tire is an individual case."

"90% of all retreads and recaps successful; no special method preferred."

"Retreads satisfactory only when tires prices are high."

UNFAVORABLE:

"A survey conducted by the U. S. Army a year or so ago, indicated that a recapped tire cost about 60% of the price of a new tire, and gave but 75% of new tire mileage, and could not be relied on in extreme operating conditions."

"Guarantee usually not performed, due to defective material or labor."

"Recaps unsatisfactory for heavy loads and high speeds."

"Have not seen a retread job that will stand the gaff."

"Saving in cost does not equal the delay in equipment when blowouts occur."

"Much against our judgment, we tried retreads and recaps. The results justified our first opinion. Have discontinued using them."

"Have not used retreads, as price is too near our new-tire prices."

"Still experimenting with retreads; no appreciable savings to date."

"Tires did not deliver sufficient mileage to warrant continuing retreading."

"We were never able to make retreading show a saving."

"Recaps go to pieces on trucks used in road-building work."

"Tires are often cut-of-balance after re-capping."

"Used a number of retreads in testing. Results were n.g., so we discontinued."

"Retreading was tried by our tire company as an experiment. They were not satisfactory. Averaged 10,000 miles as against 60,000 miles from new tires."

"Retreads and recaps do not seem to stand up under dump truck service on stone and gravel roads."

"Use retreads in cool weather; will not stand up in hot weather."

"Too much danger involved in retreads at high speeds."

"Retread companies made all kinds of promises, but none lived up to guarantee."

"On 400 retreads and recaps, the cost per tire mile was equal to new tires."

"Experimented with retreads and recaps for 2 years; proved disastrous at high speed."

"Discontinued all retreading, except on small panel jobs."

"More often we get less than 50% of new tire mileage from retreads; does not pay."

"Too many delays caused by blow-outs from retreads. Do not think it economical."

"Too much trouble in handling retreads; find no saving in long-run."

"May pay in slow speed work, but did not pay in our high-speed operation."

"Half and half, retreads are o.k. Majority of them blow out in hot weather."

"Have not found retreading satisfactory for small size tires."

"Long trips of 200 miles or more, have not had much luck with retreads. Good luck on trailers and dolly-wheels on 6-wheelers, however."

"Recapping o.k. for semi-trailer wheels; no good on tractors; cause shimmy on front due to lack of balance."

"Retreading small tires for city work seems o.k. Bad on big sizes and long hauls."

"Find retreads unsuitable for passenger-cars; mileage not enough to offset cost."

"Don't think retreads pay for dump-truck work, due to bad roads."

"Have tried retreading; did not prove satisfactory. We use all new tires."

"Have tried retreads of 5 makes of tires, three types of service, by two firms. None were satisfactory."

"Retreads don't seem to stand up on heavy trucks with heavy loads."

GRIZZLY BRINGS *MAXIMUM* BRAKING EFFICIENCY

To the BUS and TRUCK FIELD

A Bear for Wear

Backed by twenty-five years of specialized experience in the manufacture of high quality brake lining, Grizzly Full-Moulded Brake Blocks bring to the heavy duty bus and truck field more dependable, longer wearing, and smoother braking performance at minimum cost. . The characteristics of Grizzly 900-B Blocks are smooth, noiseless, dependable stops under all climatic conditions and temperatures. Grizzly's friction value rises as the drums heat, and is retained at drum temperatures as high as experienced in any character of bus and truck operation; thus delivering constant and sustained braking efficiency. . . . Grizzly offers you a plan for proving its superiority on your own equipment. A request on your letterhead will bring complete details.

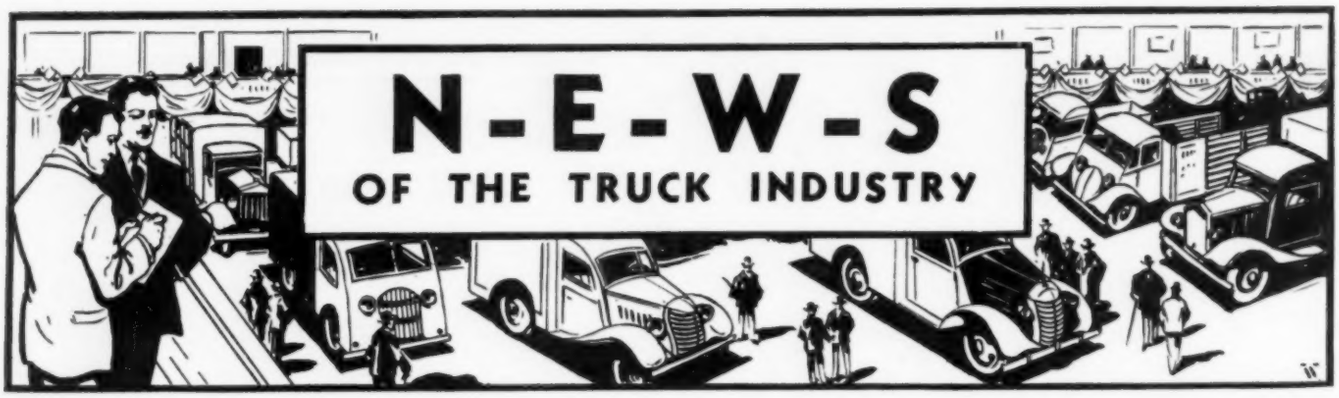
E. M. SMITH COMPANY

600-650 South Clarence Street **Los Angeles, California**

Eastern Offices: 1835 East 24th Street, Cleveland, Ohio
Warehouses: 311 W. 66th St., New York, N. Y. 3225 Locust Blvd., St. Louis, Mo.
Export Offices: 280 Broadway, New York, N. Y.

GRIZZLY

900-B · FULL · MOULDED BRAKE BLOCKS



Truck Show Established on Permanent Basis

IN VIEW of the enthusiastic acceptance of the Motor Truck Show by the industry, Jack Winchester, president of the National Motor Truck Show Corporation, announces that the Truck Show will be operated on an all-year-round basis, with permanent offices in the Hotel Pennsylvania, New York City. . . . The truck industry has now taken over the show management, according to Mr. Winchester, by means of a show corporation in which 24 manufacturers are active stockholders. . . . Preliminary plans are now being made for the 1939 exhibition. . . . As in past years, the principal object of the Truck Show will be to "sell" the public on trucks and the importance of truck transportation to the community at large.

•

Studebaker Restores Pay Cuts

PAUL G. HOFFMAN, president of The Studebaker Corporation, announced that, in view of the substantial improvement in Studebaker sales volume since the introduction of its 1939 models and the outlook for a sustained high level of the company's business in 1939, the directors had voted at their meeting on December 19 to cancel as of January 1, 1939, salary reductions which became effective on April 1, 1938. . . . Cancellation of the reductions applies to all salaried personnel except the Chairman of the Board and the President. . . . The reductions made last April were on a sliding scale, ranging from 10% on the first $1800 of annual salary up to 25% on the highest salary brackets.

•

New Folder on Covic Diesel

INTERESTING industrial applications of the Covic Diesel engine are outlined in a new folder, issued recently by the Northill Company, Los Angeles, Calif. . . . Covic Diesel power-packs are offered complete as generator-sets, power-units for industrial or construction equipment, or as power-plants for small trucks and tractors. . . . In many of these applications, the Covic Diesel is the first engine that makes possible the efficiency and economy of Diesel Power in *small* units. All Covic power-packs include the opposed-twin-cylinder, full Diesel engine, of 15-20 H.P. . . . When writing for your free copy of this new folder, mention of FLEET OWNER will hurry it along.

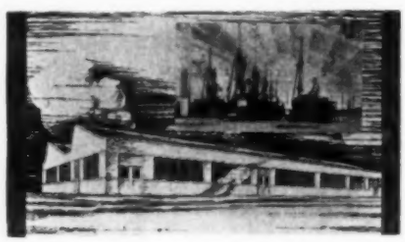
Walter Olen Addresses S.A.E.

"MODERN Transportation" was the topic of an address delivered by Walter A. Olen, president and general manager of The Four-Wheel-Drive Auto Company, at a recent meeting of the Washington Section of the S.A.E. . . . Mr. Olen's talk was keenly analytical of modern transportation facilities, and dealt with three kinds of transportation—that of thought, persons and commodities. . . . An S.A.E. member since 1922, Mr. Olen organized The Four-Wheel-Drive Company in 1910. He holds the distinction of having been president of his firm for 28 years—said to be the longest term as president that any man has enjoyed in this field.

•

Cummins Gets New Building, Equipment

EXPANSION of production facilities and places for more men at Cummins Engine Company, Columbus, Ind., is now being provided by a new building under construction. It will be equipped with new machinery and will represent an expenditure of about



$400,000. . . . It will be used exclusively for the finish and assembly of Cummins Diesel fuel-injectors and the assembly of Cummins Diesel fuel-pumps. . . . In 1939, Cummins expects to double their sales volume of 1938. The latter is considerably in excess of their record set in 1937.

•

Mack Elects Ruhf Vice-President

CHARLES T. RUHF was elected vice-president of Mack Trucks, Inc., and the Mack Manufacturing Corp., at a recent meeting of the board of directors. . . . Mr. Ruhf has served the Mack Company for many years, having joined the company in 1912. . . . Since 1937 he has been in charge of production at the Allentown, Pa. factory; as vice-president he will continue in that capacity.

Dave Buttles Now Cummins Sales Manager

CUMMINS Engine Company, Columbus, Ind., through P. E. Letsinger, vice-president, announces the promotion of Dave Buttles (of Seattle, Wash.) to the post of national sales manager, with headquarters at the home office in Columbus. . . . For the past four years Mr. Buttles has been factory sales and service manager for 11 Western states; he has been largely responsible for building the present strong position which Cummins Diesels hold in the truck and marine fields on the West Coast. . . . Mr. Buttles' record as service manager for one of the largest Diesel-powerd truck fleets on the Pacific Coast first attracted the attention of Cummins. . . . Starting as an employee with a rich background of service, Mr. Buttles developed into an outstanding salesman. He knows the Cummins Diesel from top to bottom. . . . Our best to you, Mr. Buttles!

•

F.W.D. Promotes Walter Klaus

R. H. SCHMIDT, general sales manager of The Four Wheel Drive Auto Company, Clintonville, Wisconsin, recently announced the appointment of Walter G. Klaus, as district sales manager in the states of Minnesota and North Dakota, where he will supervise sales work among the FWD dealers in the territory. . . . Since October 1934, Mr. Klaus has been in the company's employ as assistant to S. H. Sanford, manager of the dealer division, and prior to that time he has had considerable sales experience. . . . Mr. Klaus and his family have taken up residence in Minneapolis, Minnesota.

•

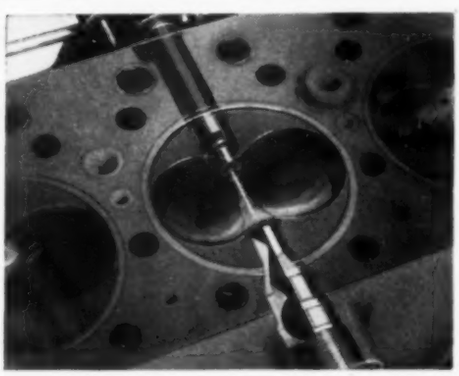
Bantam Back on Full-Time Production

BANTAM production lines went back to full-time production last month, after three weeks of slackened production necessitated by die changes. . . . Although Bantam started building its 1939 cars in August, all cars built after December 12th will incorporate a number of improvements, including full force-feed lubrication. . . . Valve openings have been changed from 30 to 45 degrees. . . . All passenger cars will have hood latches that lock from inside of the car. . . . Other mechanical changes include a new type rear main bearing, rubber-insulated body mountings, improved ignition, and weatherproofed body insulation.

NEW DODGE 3-TON DIESEL TRUCKS

Upset old Limitations on Automotive Diesel Performance!

HIGH-SPEED DODGE DIESEL ENGINE



CONTROLLED COMBUSTION MAKES IT SMOOTH

Peak combustion pressures do not greatly exceed those in a gasoline engine because the Dodge energy cell controls combustion throughout each power stroke. Other important Dodge advantages are automatic injection advance, a simplified fuel pump with only one metering valve, anti-clogging nozzles, and automatic built-in mechanical governing of idling and maximum speed. Reliable 4-cycle principle, many proved dependability and long-life features.

DEVELOPED AND BUILT BY DODGE... FLEXIBLE AS GASOLINE POWER WITH AS MUCH AS 40% INCREASE IN FUEL MILEAGE

SMOOTHNESS and flexibility that's almost unbelievable until you learn about the many amazing engineering advancements Dodge has introduced in automotive diesel construction! This brilliant new Dodge 3-Ton Diesel Truck is easy to start on zero mornings, successfully burns any automotive diesel fuel within its specified range, with notably smoke-free exhaust. Idles perfectly! Operates at maximum efficiency over the entire power range. If you operate 3-ton trucks as much as 25,000 miles a year per unit, by all means get the facts on this *different* diesel truck that asks no favors from the driver and gives you up to 40% more mileage per gallon of fuel than a comparable gasoline truck. See your Dodge dealer, or mail the coupon.

SEE YOUR DODGE DEALER OR MAIL COUPON FOR *Facts*

DODGE DIVISION, CHRYSLER CORPORATION
DETROIT, MICHIGAN

Gentlemen: Without obligating me, send information on the new Dodge Diesel 3-ton trucks.

*Name*_____

*Address*_____

*City and State*_____

HEAVIES
Announced by Mack

•

NEW "SUPER-DUTY" models, developed especially for mine and quarry work, are rated at 50 and 23 tons gross. . . . They are said to be the "largest, regularly manufactured trucks in the world."

WITHIN the past few months Mack Trucks, Inc., Long Island City, N. Y., has developed two "super-duty" truck models designed especially for open-pit mining, quarrying and similar "off the road" operations. Said to be the largest regularly manufactured trucks in the world, these are entirely new units, engineered after considerable investigation into the requirements of this particular type of work.

Of the two new models, the FC six-wheeler (illustrated) is rated at 100,000 lbs. gross vehicle weight and has a net payload capacity of 30 tons. As a four-wheel truck this model has a gross vehicle rating of 60,000 lbs. and payload capacity of 15 tons. The other model, designated as the FJ, is designed for somewhat smaller capacity and is available only with four wheels. It rates at 45,000 lbs. gross with payload capacity of 11 tons.

The high performance of the latter model makes it particularly suitable for small pits where the grades are steeper or for operations where higher maximum speeds over extended hauls are desirable.

All three of these new units are chain-driven and can be obtained with either gasoline or Diesel power-plants. Standard motive equipment on the Model FC is a six-cylinder, 5¾" x 6" gasoline engine having a maximum torque of 610 lb. ft. at 900 r.p.m. and developing 185 h.p. at 1,600 r.p.m. The standard engine on the Model FJ has six-cylinders, 4¾" x 5¾" bore and stroke, develops 455 lb. ft. torque at 800 r.p.m. and turns out 151 h.p. at 2,200 r.p.m.

Transmissions are especially-designed 5-speed main boxes with 2-speed integral auxiliaries, and offer 10 well-spaced ratios from 12.75:1 low-low, to .73:1 high, in the model FJ; and 14:1 low-low, to a .73:1 high in the FC. High and low reverse gears in the main box can be furnished on order, thereby providing four reverse speeds if desired.

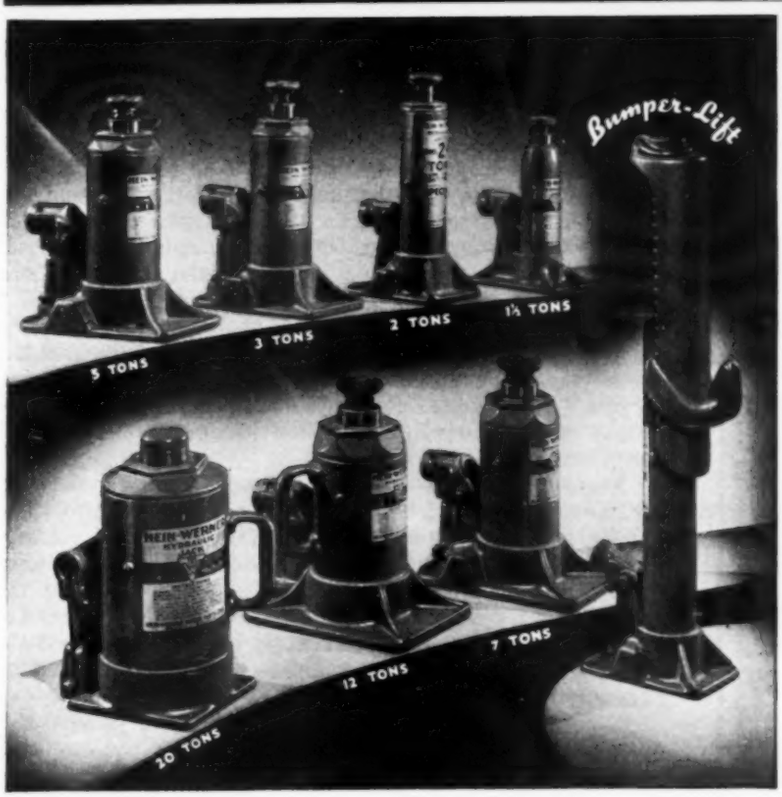
The FC jackshaft is a new dual-reduction gear-set, with forged banjo-type housing. To relieve the shafts of all chain-pull bending load, the sprocket hubs are mounted on double Timken bearings on the banjo housing spindles and are driven with a spline-type external flange, identical to a full-floating rear axle. Two-and-one-half-inch pitch, swivel-type, Link-Belt chain, said to be the largest ever applied to automotive installations, is used throughout on the FC. The FJ jackshaft is a single-reduction unit designed particularly for heavy-duty (*Continued on page* 54)

You get a

LOT of VALUE for Little Money

when you buy a

HEIN-WERNER HYDRAULIC JACK



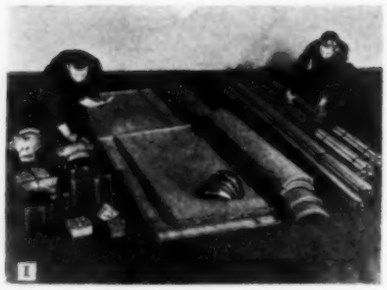
12 ton capacity model, shown above, has low of 9"...Hydraulic lift, 5¾"...Extension screw, 3"...High of 17¾"...Wt. 37 lbs.

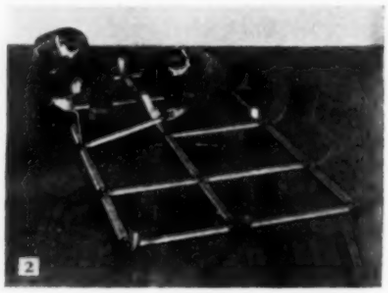
It will pay you to equip every car and truck in your fleet with a new Hein-Werner Hydraulic Jack . . . Every model in this complete line is an exceptional value—and when you consider the sturdy construction, ease of operation, safety factors *and* the price—you surely will agree that in buying a H-W jack *you get a lot of value for little money.* For example—the 12 ton model (illustrated at right)—only $17.50 (West Coast, $18.50).

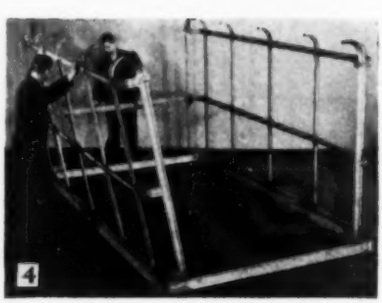
Complete line includes the "Bumper-Lift" and the "Bullet" 1½ ton capacity jacks for passenger cars...Also 2 ton "Light Truck Special," 3, 5 and 7 ton capacity jacks for trucks, and 12 and 20 ton jacks for trucks and buses . . . And a complete line of FLOOR JACKS—1½, 2, 3 and 4 ton capacity . . . Ask your jobber or write us for 1939 prices and details on complete line.

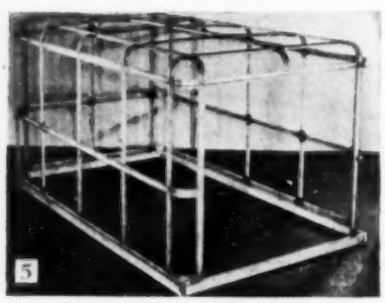
HEIN-WERNER MOTOR PARTS CORP.
Waukesha, Wisconsin

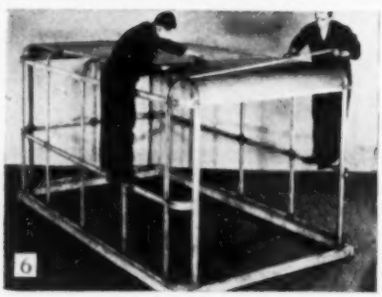
FEW MODELS ENGINEERED TO DO THE WORK OF MANY
HEIN-WERNER *hydraulic* JACKS











DRY-ZERO ANNOUNCES

TRUCK

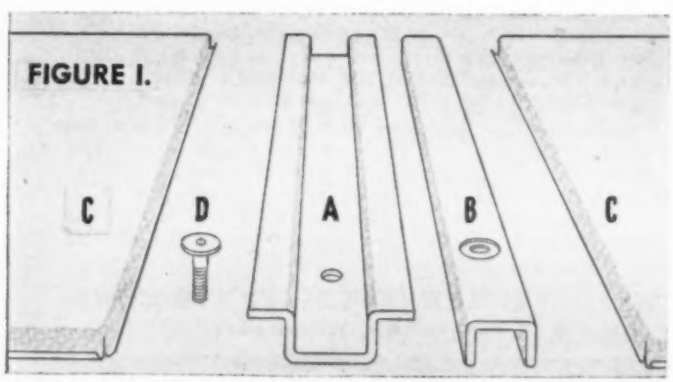
A NEW type of all-steel truck body, built of patented steel framing and panel sheets is introduced by the Dry-Zero Corporation, Chicago, Ill. As the photos show, this is an entirely *new* method of construction, developed by Harvey Lindsay, president of Dry-Zero, and called "Lindsay Structure." Basically, this type of construction places the steel panel sheets under tension between the framing members, drawing them together and bracing them so that gussets and cross-braces are not required. The sheets are fastened to the framing *without* the use of rivets or welding.

To understand the principle of "Lindsay Structure," let us first refer to the three drawings at the bottom of these two pages. In Figure I are shown the four basic elements. A is the flanged frame. B is the "tensioner," which fits inside the channel of the flanged frame. C and C are two panel sheets with patented edges which fit into the flanged frame. D is the patented socket lock-screw which draws the tensioner into the channel of the flanged frame.

In Figure II are shown each of the four basic elements in place before the union is tightened. The edges of the panel sheets have been placed in position in the flanged frame (A). The tensioner (B) has been applied over the edges of the sheets. The socket lock-screw has not yet been screwed down.

Figure III shows the tight, completed union between frame and sheets. The socket lock-screw has been turned home, pulling the tensioner (B) into the flanged frame (A). The curved edges of the sheets have been pulled downward by the edges of the tensioner, drawing the sheets taut. The edges of the tensioner are bedded against the sheets and the bottom of the channel of the flanged frame. This assembly is continuous around all edges of each sheet.

Before going into explanation of the basic advantages of the new body construction, let us follow the construction of a "Lindsay Structure" body through the shop—your shop or the body-builder's shop, referring to the



"LINDSAY STRUCTURE"

BODIES

photographs, on both sides, which are duly numbered.

Figure 1 shows a set of materials for a 12-foot truck body, just as received from the factory. The boys in the picture are checking up and reading the preliminary instructions for assembly. The large sheets in the center are the side, front-end and roof panels. On top of them are the curved corner caps. To the right are the curved 6-inch radius cove panels for eaves and corners. On the extreme right is the framing. On the left are the curved framing pieces and the fittings for connecting the frame members.

Figure 2 shows the side frames being assembled. This is the first step. The man on the left is tightening a cap-screw on one of the fittings used to join the members.

Figure 3 shows the corner framing assembly in close-up and illustrates the drawn-steel fittings used for assembling the frame.

Figure 4 shows the erection of the side framing. One side is already in position and the other is being raised. The man in the rear is ready with one of the members that fasten the sides together.

Figure 5 shows the complete job of framing. The wooden two-by-fours on which the frame rests, are *not* a permanent part of the body framework.

Figure 6 illustrates the application of the roof sheets. The man on the right is fitting the U-shaped "tensioner" into the flanged frame and over the formed edge of the roof sheets. The man on the left is tightening one of the socket lock-screws, drawing the tensioner down into the channel and pulling the panel sheets taut.

Figure 7 shows the application of a corner-cap. The curved edges are cut in saw-tooth pattern, to facilitate smooth bending.

Figure 8 shows a close-up of a side sheet being fitted into the framing. Note how the formed edge of the sheet fits into the channel of the flanged framing member.

Figure 9 illustrates how the tensioner is fitted over the edge of the side and roof sheets, and into the channel of the flanged frame. (*Please turn to page* 36)

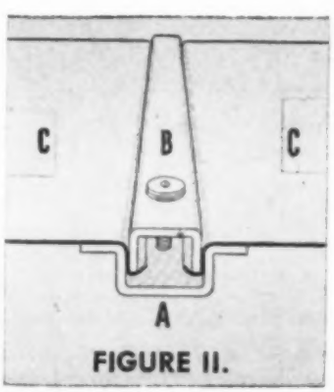


FIGURE II.

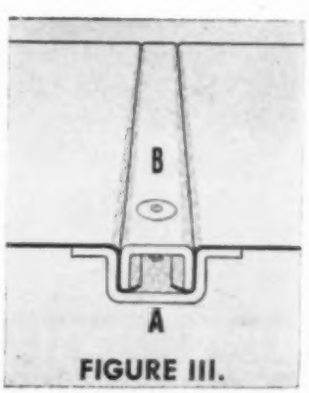
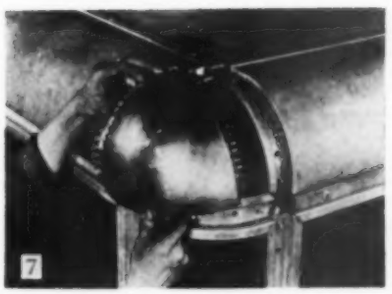


FIGURE III.

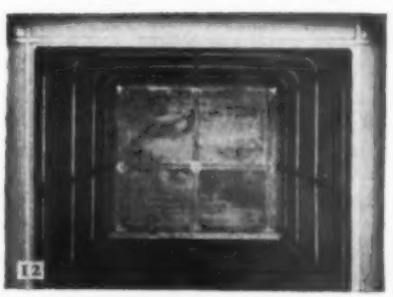

7

8

9

10

11


12

"LINDSAY STRUCTURE" *for* TRUCK BODIES *(Continued)*

HERE'S a "Lindsay Structure" truck body, 12 feet long, 7 feet wide, and 6 feet high, with 6-inch-radius cove corners. . . . Built by Batavia Body Co., Batavia, Ill.

Figure 10 depicts the fastening of the tensioner. The screw goes through the tensioner and engages the back of the flanged frame, pulling the tensioner down tight over the edge of the sheet, which is drawn taut in the process. The screw is locked by tapping its edge into two recesses in the tensioner.

Figure 11 shows the assembled body, complete, except for floor, doors and attachment to the chassis. Note that any sheet or piece of framing can be removed without disturbing the other members.

Figure 12 illustrates the interior of the body. The makers point out that when the panels are all drawn taut over the framing, the formed steel crosses and tees, used to erect the framing, are relieved of most of the structural load.

Although "Lindsay Structure" was originally designed for the truck body field, these materials are already being used for the erection of small industrial buildings, shipping containers, cabinets and similar products, it is declared.

From the truck operator's viewpoint, bodies built of "Lindsay Structure" materials have four advantages. They are economical in first cost. They can be dimensioned to within half an inch of any size desired, using nothing but standardized material. They have greater strength per unit of weight, it is claimed. Because framing and panels are standard, repairs can be made quickly and cheaply.

From the truck body-builder's viewpoint, "Lindsay Structure" materials create an opportunity to build bodies of special sizes and for special uses by modern quantity-production methods. Dry-Zero does not believe, however, that these bodies will replace all custom-built bodies, according to Mr. Lindsay. There are certain body shapes and styles to which this construction is not readily adapted, he points out. There are other types of bodies, however, where "Lindsay Structure" materials may be used in partnership with regular construction methods.

In no case do these materials replace all the work ordinarily done by the commercial body-builder. The materials merely provide a new method of framing and covering the body.

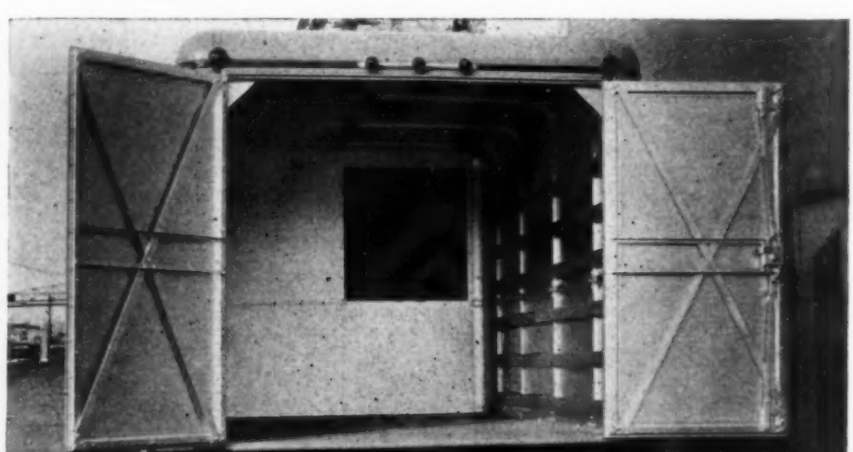
"Lindsay Structure" materials consist of standard framing members, panel sheets and fittings, as previously described. The materials are fabricated by quantity-production methods on special machinery developed by the company. The same framing, sheets and fittings used for truck-body construction are also being used for small industrial buildings and containers of various kinds. The use of the same materials for many purposes makes them more economical to produce, points out Mr. Lindsay.

This standardization of materials does not limit the number or variety of body sizes that may be built. It is possible to build a body within one-half inch of any desired size because standard panels of this kind are available in widths from 5 to 41 inches, by inches, and in lengths from 17 to 143 inches, by inches. Panel sheets in fractional dimensions, such as 29½ by 77¼ inches are also available, but at increased cost.

The machine that forms the edges of the "Lindsay Structure" panels is capable of manufacturing some 4,000 different sheet sizes and shapes, all of which are standard. The company also has made available three types of corners for bodies. The "M" type corner has a radius of 1½ inches. The two cove type corners have radii of 6 and 8½ inches.

All "Lindsay Structure" materials have been de-

(Please turn to page 54)



REAR VIEW of the same body shown above. . . . The doors are also built of matching "Lindsay Structure" materials. . . . Note the slat-type lining on the right-hand side.

ATLANTIC BREWING COMPANY

BREWERS OF

• *Atlantic Tavern Pale Beer* •

1549 FULLERTON AVENUE

CHICAGO

December 3, 1938

Paul E. Hawkinson Company,
2101 Kennedy St., N. E.,
Minneapolis, Minnesota.

Gentlemen:

As we have been using the Hawkinson Treads for some time, thought you might be interested to know the good results we are having.

Previous to Hawkinson Treading, our tire cost was $1.20 per 1000 miles, but by treading all tires as soon as they begin to show signs of becoming smooth we have lowered our cost to 80¢ per 1000 miles.

We Hawkinson tread a tire as many times as it will pass the rigid inspection of your service station, the Chas. D. Kimball Company, here in Chicago, and now have tires operating that have had the third tread applied.

We have never had any of your treads peel off and due to the repelling action of Hawkinson Treads we have less cuts and bruises than before.

Very truly yours,

ATLANTIC BREWING COMPANY

BY *E. C. Wood*

Traffic Supervisor

ECW:JB

"—our tire cost was $1.20 per 1000 miles....we have lowered cost to 80¢"

The Atlantic Brewing Company of Chicago operates a fleet of 17 TRUCKS, 9 TRAILERS and 21 SALESMEN'S CARS and uses HAWKINSON TREADS exclusively. (Photo shows only part of the fleet). Besides the many other advantages they find in using HAWKINSON TREADS, they state that they have lowered their tire mileage costs from $1.20 per 1000 miles to only 80c per 1000 miles—a distinct SAVING of 40c per 1000 miles, or 33-1/3%! In these days when a lowering of even 1% in operating costs is important, 33-1/3% saving on tire mileage cries for attention. Investigate the HAWKINSON TREAD and its possibilities for savings and satisfaction for your fleet.

HAWKINSON TREADS *Improve* TIRES!

Many users of HAWKINSON TREADS tell us that our treads actually improve their tires—that they experience INCREASED mileage on them. There are several very good reasons for this, two of these reasons being that (a) no heat is applied to the cords and inner rubber during the process of application, and that (b) the tread is applied under natural running conditions that are not used even in making a new tire, causing HAWKINSON TREADS to *run cooler*. There are more than 260 authorized HAWKINSON TREAD service stations throughout the country, each of them trained to apply HAWKINSON TREADS *exactly* in accordance with our rigid specifications and each equipped with HAWKINSON patented equipment. No HAWKINSON TREAD will be applied by them until the tire has been given the most rigid inspection and the carcass found to be in first class condition.

PAUL E. HAWKINSON COMPANY

2101 KENNEDY ST. N. E. **MINNEAPOLIS, MINN.**

TROUBLE SHOOTER's DEPARTMENT

A department, devoted to correspondence from readers of FLEET OWNER. Any questions having to do with automotive service will be answered in this department. All properly signed inquiries will be replied to by mail and such of them as are believed to be of possible interest to other readers will be published in these columns.

STORAGE BATTERY HINT

● When storage batteries are allowed to stand on open circuit, a definite impairment may result. . . . It is recommended that storage batteries be placed on charge when a drop in gravity of 30 points has taken place, or, after standing for a period of six weeks, whichever occurs first.—*National Battery Manufacturers' Association.*

●

RE NEW OIL-TESTER

● *Dear Mr. Fischer:* We are considering the manufacture of a viscosity-tester, which consists, basically, of an inclined plate having two concave indentations at the top, into which a few drops of used and new oil are placed, respectively. At the bottom of the plate is a "goal line," the idea being that if the *used* oil runs down the plate faster than the *new* oil, it should be changed.

It seems to me that there should be a great demand for some means of showing the car-owner (and the fleet operator) that his oil really needs changing. He should not be made to dirty his hands to feel the oil, nor should he be sold an oil-change just because the oil is not a nice golden color. It have noticed that it does not take very long for an oil to lose its new color, but that doesn't necessarily mean that it is worn out. I would appreciate your opinion on the subject.—*Manufacturer, Oneida, New York.*

Answer: You are right in that a demand exists for some kind of a device to tell whether oil is fit for further use or not, but we are sorry to say that there "ain't no such animal." The only way this can be decided is by making a laboratory analysis of the oil itself, so far as we know.

We regret that we do not think much of your so-called viscosity-tester. Feeling the oil between the thumb and fore-finger is just as good —but neither of these "tests" are worth a darn.

In the first place, oil engineers agree that in most cases the viscosity of used oil is greater than it was when originally poured into the engine—in other words oil seems to increase in viscosity with use. . . . In the second place, foreign matter getting into the oil while in use will also add to its "thickness." . . . This being the case, would not your device act "against" itself, showing the used oil as having a greater viscosity than the new?

At any rate, such a "horse-race" test of oil running down a plate is, at best, a poor viscosity test. You seem to forget that temperature enters into the picture, too. Apparently you are trying to learn whether the oil has been thinned by dilution, which might be a good reason for changing it, but dilution does not seem to worry people much any more, especially if the engine is operated warm enough. Dilution generally remains fairly constant, in a low percentage that seldom does harm. Sometimes dilution does more good than harm, by thinning out the oil enough so that it actually reaches wearing parts having tight clearances.

There are so many other good reasons for changing oil, that viscosity has become comparatively unimportant. And there is no way of finding these reasons (impurities) except by laboratory analysis. Of course, if you are desirous of fooling the public (which, incidentally, loves to be fooled) it might be possible to use such a device as a "merchandising aid" and sell a lot of oil. But, as before stated, if all used oil tested heavier than new oil of the same brand and number, your clients would not sell any oil at all. Not unless they had a "trick" oil made up which never would run down the plate, and which would indicate that all oil had to be changed.

By this time you perhaps have gained the idea that we think such an oil tester is as full of holes as Huey Long's hat. Frankly, we do not think it is so hot. . . . And we are sure that fleet operators could never be sold on an oil-change in this manner.

You May Not Believe It!

(But It's True)

THE FACT

AN under-inflated tire revolves more times per mile than one of the same size, correctly inflated.

THE PROOF:

THIS is because the diameter (rolling radius) is reduced as the air pressure goes down. . . . Not only does this mean faster tire wear, but it makes steering harder and tends to increase fuel consumption, because more power is required to roll a soft tire. . . . This little item was suggested by Schrader engineers. . . . Pass it on to your drivers. It will increase their realization of the necessity for checking tire-inflation at frequent intervals.

●

SEEKS FUEL HEATER

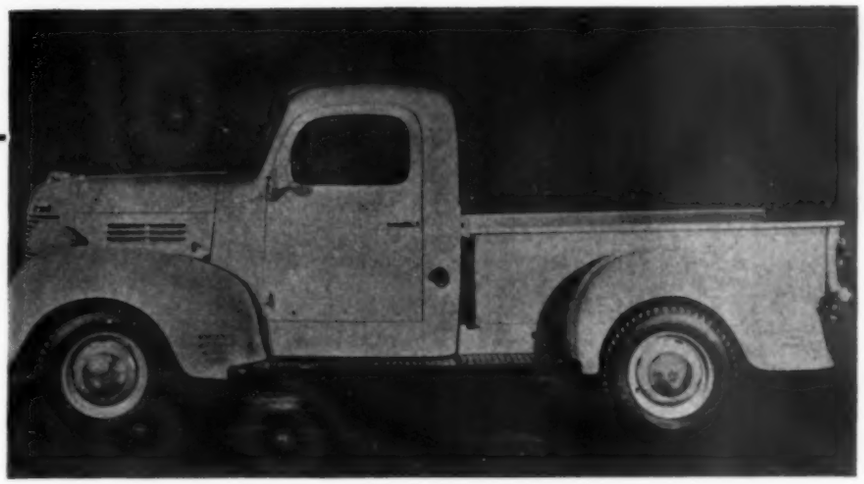
● *Dear Mr. Fischer:* We are trying to locate the manufacturer of a device which we understand is a little chamber to be inserted in the gasoline line, in which there is a small heating coil to vaporize the fuel. Energy for heating is doubtlessly supplied with current from the battery. Can you tell us anything about this, or give us the maker's name and address?—*G. E., Schnectady, N. Y.*

Answer: We suggest that you try writing to Aske-Fuemer Company, 2921 Stevens Avenue, Minneapolis, Minn. . . . Several years ago we recall having heard of a device called the "Aske-Fuemer," and this is the last address we have of that company.

●

HARD-STARTING

● Hard starting, chief motor aggravation on cold mornings, can frequently be corrected by new spark plugs. Long mileages of the summer season, much of it at high speeds, may have fouled points and left electrical ignition systems far below peak efficiency, Champion Spark Plug Company's engineers advise.



Plymouth Announces Commercials for 1939

PRICES on a new line of 1939 Plymouth Commercial Cars were announced by the factory last month. Production of the new commercial models, listing many improvements over last year, is already under way, and sample cars are by now in the hands of Plymouth dealers throughout the country, factory officials have promised.

The following prices, which are lower than the prices of similar models last year, have been set for Detroit delivery of the 1939 Plymouth commercial types:

Plymouth half-ton Commercial Chassis-with-Cab—on which the user can mount any type of special body best suited to his requirements — $545. Commercial Pickup truck (illustrated above) with all-steel box—$575. Complete details are not as yet finally set for the Commercial Sedan with panel body; this will be announced later as a special type for rapid delivery work.

In recognition of the commercial car user's need for equipment that commands attention and adds prestige to his business, the new Plymouth commercial chassis has the same strong "eye appeal" that marks the rich designs of the new 1939 Plymouth passenger cars. New, vee-type windshields add to the apparent roominess of the drivers' compartments without sacrifice of load space. (See illustration at the bottom of this page).

For maximum safety, bodies and cabs are built of solid steel construction. These are mounted on a special commercial car chassis of 116-inch wheelbase, designed from the ground up for commercial use, according to Plymouth engineers. Structural foundation of this new chassis is a rigid, truck-type frame. For extra strength and durability, the side frame channels are 6 inches deep and are reinforced by five cross-members, including the front bumper, which is built as an integral part of the frame.

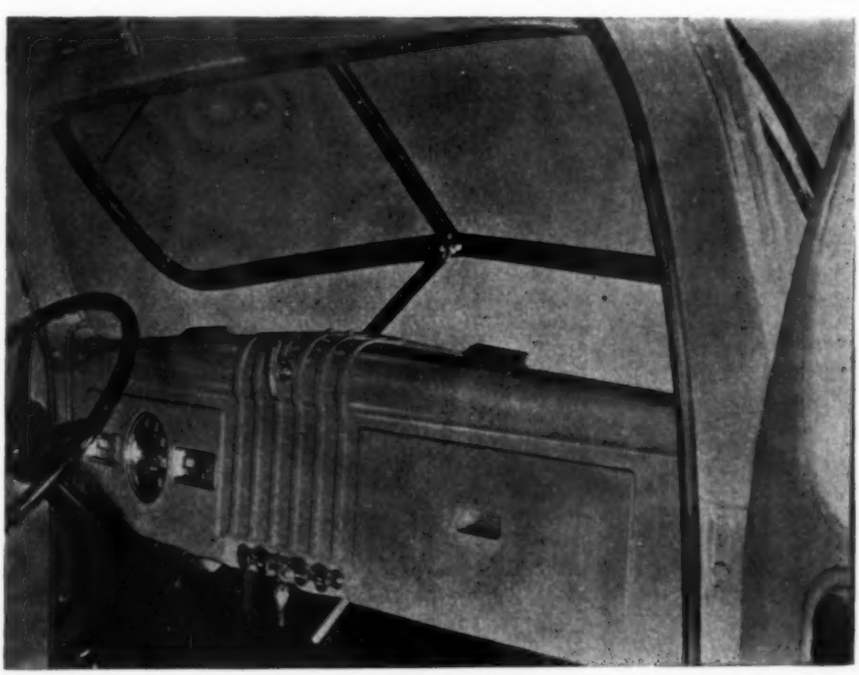
Specially featured this year is better load distribution, with the cab mounted three inches farther forward of the rear axle. This opens up additional load space on the frame, so that this year's steel pick-up box is a full 6½ feet long, without lowering the tailgate. Width of the body on the floor is 4 feet.

The low floor makes it easy to load and unload from sidewalk or ground level. Edges of the deep flare boards—also of solid steel—are rolled for added strength. The steel tailgate can be lowered and secured flush with the floor, giving added capacity for extra long or bulky objects.

The engine is Plymouth's regular L-head design, improved this year for new high-torque performance and specially adapted for heavy-duty, commercial work. The special power plant delivers 70 horsepower at 3,000 r.p.m. with consistent economy, through the use of all the rather well-known Plymouth engineering features.

The heavy-duty transmission of the new Plymouth Commercial has five ball and roller bearings. The rear axles are the new hypoid type—much stronger and more

(*Please turn to page* 54)



LETTERS TO THE EDITOR

THANKS, MR. HORINE!

● *Dear Mr. Fischer:* Permit me to congratulate you on the constructive stand which you have taken, editorially, with respect to the recent National Motor Truck Show, held in New York City.

Our Company has expressed its complete satisfaction with the Truck Show as a whole.—*Merrill C. Horine, Sales Promotion Manager, Mack Trucks, Inc., New York, N. Y.*

●

MANUFACTURER WANTED

● *To the Editor:* I have just completed the invention of an automatic time switch for vehicle engines, the object of which is to stop the motor after a pre-determined idling period, and thus produce resultant savings in fuel.

This unit is entirely electrical and when manufactured, should occupy the same space as the average ignition coil. It is essentially made for fleet work and is now being put through rigid tests on a fleet truck of a large company.

Some of its features include: All-electric unit; one moving part; adjustable timing for shut-off; all dash-currents cut out when motor stops; unit goes into operation automatically at all times; ignition cuts off when key is left on.

I would appreciate your calling this invention to the attention of any manufacturers who may be interested in the manufacture and marketing of this device.—*F. J. Zukaitis, 2820 Park Ave., Plainfield, N. J.*

●

ANNUAL APPRECIATION

● *To the Editor:* We would consider our year's work unfinished, should we fail to express our appreciation for the pleasure and help that your publication, FLEET OWNER, has given us during the year recently ended.

We take great pleasure in extending our best wishes for 1939.—*Howard A. Evans, Assistant Supt. Motor Transportation, Phillips Petroleum Company, Bartlesville, Okla.*

IT'S O. K. TO REPRINT

● *Dear Mr. Fischer:* In looking over last August's issue of FLEET OWNER, I noticed a very interesting article by B. B. Bachman on the subject of truck fleet maintenance.

In my work as a safety engineer, I frequently find occasion to make use of material of this type in the furtherance of safety on the highways. I would appreciate it if you would grant permission to us to use excerpts from this article to be mimeographed and distributed to the individuals responsible for fleet safety among the various fleets that we insure in Chicago.

I wish to take this opportunity to congratulate you upon your very fine publication.—*E. G. Burgess, Engineering Department, Liberty Mutual Insurance Company, Chicago, Ill.*

●

"A GREAT SERVICE"

● *To the Editor:* We deeply appreciate the courtesy you have rendered us in furnishing a leather binder for our summaries of the Question-of-the-Month department of FLEET OWNER.

You are giving a great service to the fleet owners of America, and we, as one, are very appreciative of your efforts. We shall always try to cooperate with you in answering your questionnaires promptly and sincerely. —*O. F. Rothmeyer, New State Ice Company, Oklahoma City, Okla.*

●

"DIGESTS" US EACH MONTH

● *To the Editor:* I wish to thank you for your monthly publication. "FLEET OWNER", which you have been kind enough to send me for the past several years. It has been of great value in helping me in my work during my term as head of the maintenance of apparatus.

Recently I have been promoted to a higher rank in our Fire Department, thus severing my relations with the repair and maintenance department of fire apparatus. Even though I have been elevated in rank, I still digest "FLEET OWNER" every month. —*Edward Fass, Fire Department, City of Hackensack, Hackensack, N. J.*

WE HELP LOWER COSTS

● *Dear Mr. Fischer:* For a number of years we have been receiving your magazine, FLEET OWNER, and, to say the least, have always been very happy to have this publication sent to us.

The many and varied ideas which lead from it have proved invaluable to us, many, many times, and have been the means of lowering our costs on our fleet of trucks and cars.—*E. E. White, Supplies Department, The Chas. H. Lilly Company, Seattle, Wash.*

●

"NOT OTHERWISE OBTAINABLE"

● *Dear Mr. Fischer:* I am sending you, properly filled out, Questionnaires Number 92 and 93 of "our" Question-of-the-Month Department. I try to remember to fill these out as soon as my copy of FLEET OWNER comes, but sometimes they get "buried" for a while, and, out-of-sight, out-of-mind, you know. I will try to be more prompt in the future.

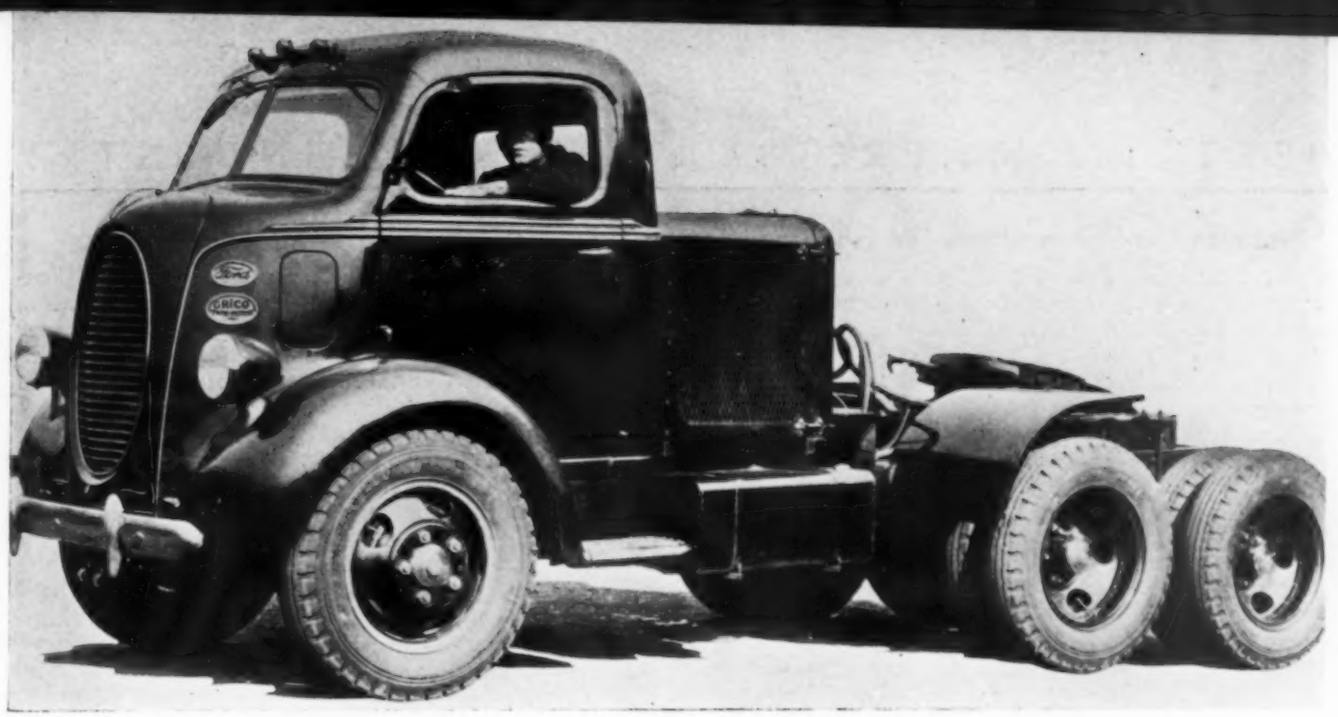
Permit me to state that I get a lot of good out of your magazine, FLEET OWNER—information that is not otherwise obtainable. After reading it through, I pass it on to our mechanics. Thanks a lot for FLEET OWNER. It seems to fill its own niche in the automotive field.—*Guy H. Bryner, Asst. Engineer-in-Charge, Erie County Highway Department, East Concord, N. Y.*

●

WANTS Q-O-M's DATED

● *To the Editor:* This is to acknowledge with thanks the handsome leather binder in which to file our copies of the summaries to the Question-of-the-Month Department. We shall find it quite convenient for the purpose, and for future reference.

I think it would be helpful to have, somewhere on each Question-of-the-Month summary, the date on which the survey was made. This would be helpful in referring to it in future years. — *Randolph Whitfield, Supervisor of Automotive Equipment, Georgia Power Company, Atlanta, Ga.*



NEW TRACTOR *is* DRIVEN BY 2 MOTORS

AFTER two years of research and experiment, The Gear Grinding Machine Co., Detroit, Mich., announces the new "Grico Twin-Motor Tractor", illustrated in two views on this page.

The new Twin-Motor unit consists of the conventional standard Ford cab-over-engine short wheelbase truck to which has been added a second engine placed immediately back of the cab. The second engine drives another set of wheels through its own drive-shaft and rear axle. A streamlined hood, harmonizing with the other sheet-metal work of the unit, houses the second engine. The combined horsepower of the two 95 horsepower motors is 190, with a corresponding increase in rim-pull and torque. Company officials point out that the unit was designed and engineered to meet the demand for great horsepower in a low, net-weight tractor, combined with stamina, speed and economical operation.

In several thousand miles of closely analyzed operations, company engineers cite a record of economy for this tractor, resulting from the fact that a large, heavy load can be pulled with two engines and the empty trailer can be returned by only one engine. By cutting in the second motor when approaching a grade and pulling a load, the Grico Twin is said to be able to double the power of the truck while continuing at the same speed.

Performing alone, each motor is run by its individual controls. When the two engines are working together they provide dual operation in every respect with the exception that there is a single throttle, single gear-shift lever and single brake and clutch pedals. Double compression-drag of the two motors makes for a lighter use of the vehicle's brakes, and provides better control at all times.

Engineers of the Company state that a principal advantage of this new tractor is the ability to maintain regular, dependable schedules and deliveries, due to freedom from motor or mechanical failures, as only one motor is necessary to reach a destination and no delays should result.

Designed primarily for heavy-duty service where tremendous power is essential, the Grico Twin has a variety of vocational uses, including off-the-road hauling of building supplies from mines, pits, quarries, etc.; in road building and construction; in petroleum and oil fields; for transporting milk via tank trailers; in logging and lumber operations; in hauling heavy machinery and steel; for public utilities; and in all general hauling, trucking and warehousing.

With this new tractor the concern now offers a complete line of three separate units designed to meet every trucking requirement. A second device, also newly added, is the trailing axle. The (*Please turn to page* 55)

Marmon-Herrington Offers "Marsh Buggy"

THE 1939 line of All-Wheel-Drive Trucks manufactured by the Marmon-Herrington Company of Indianapolis, Indiana, includes a new model of the All-Wheel-Drive Marsh Buggy, designed to go places and haul passengers and equipment where no human being has ever been able to go before.

Fundamentally, the Marsh Buggy is a Marmon-Herrington All-Wheel-Drive Ford Truck, especially engineered to accommodate the mounting of from four to ten 13.50x24 tires. The number of tires furnished varies in accordance with the type of terrain in which the vehicle is to operate. For less extreme conditions single tires front and rear are furnished, but for the deeper more difficult marshland ten tires are supplied, three on either side in the rear, and two left and two right in the front.

Much engineering had to be done, of course, to provide proper axles and gear ratio for these extremely large wheels, and structural changes were necessary on the Ford truck chassis. In reality, the Marsh Buggy combines the tractive ability of Marmon-Herrington All-Wheel-Drive, applied to the enormous tire surface of the ten big tires, with the "flotation" effect gained by these same big tires. The vehicle actually seems to paddle its way across marshland which cannot be traversed by boat, by men or animals, nor by any other type of production vehicle.

The Marmon-Herrington Company builds a complete line of four and six-wheel all-wheel-drive trucks and truck-tractors with load capacities up to twenty-five tons, and in addition, converts all Ford trucks, passenger and commercial cars to all-wheel-drive. For further information write to C. A. Campbell, Marmon-Herrington Company, Indianapolis, Ind. . . . Mention of FLEET OWNER is always appreciated.

●

Butane-Propane Unit at Truck Show

ONE of the interesting exhibits at the Truck Show was a newly-designed gasoline tank-truck, which is of particular interest to the industry, since it embodies the application of a Ford engine of advanced design, feeding off a new fuel system and burning Butane-Propane fuel.

This new type fuel promises much for the future of transportation, because its use eliminates obnoxious odors, carbon monoxide gases, crankcase dilution, and assures longer life for the engine parts with fewer oil changes necessary during the life of the unit, according to J. F. Winchester, general show manager.

The tank is built upon a Ford chassis, fitted with a 6-wheel unit or third-axle, and mounted with a steel tank.

Private-Carrier Plates May Be Required

DEFINITE notice that the Interstate Commerce Commission may require private motor truck operators to display identification plates under the Motor Carrier Act of 1935 as amended in 1938, is presented in an official interpretation of the new provision of the law on that subject.

Some time ago the Commission told Congress that the language in question was "not directed against private carriers of property by motor vehicles. * * * "

An official communication by W. Y. Blanning, Director of the Bureau of Motor Carriers, interprets the amendment as applying to private motor trucks. He adds that regulations making that requirement "have not, however, been issued, so that at the present time and until action is taken by the Commission, strictly private carriers are not required to display identification plates."

●

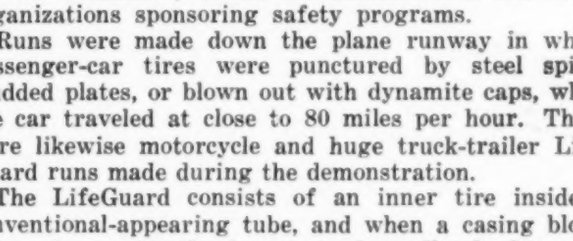
Goodyear Stages LifeGuard Demonstration

HOME-TOWN demonstration of a locally manufactured product created unusual local interest among residents, when recently at Akron, Ohio, more than 3,000 people attended a Goodyear LifeGuard demonstration at the city airport.

Headed by President P. W. Litchfield, E. J. Thomas, executive vice-president; R. S. Wilson, vice-president and sales manager and W. D. Shilts, secretary, Goodyear's official family was present to greet local businessmen, officials of the Akron Safety Council, Akron Chamber of Commerce, Akron Automobile Club and other organizations sponsoring safety programs.

Runs were made down the plane runway in which passenger-car tires were punctured by steel spike-studded plates, or blown out with dynamite caps, while the car traveled at close to 80 miles per hour. There were likewise motorcycle and huge truck-trailer LifeGuard runs made during the demonstration.

The LifeGuard consists of an inner tire inside a conventional-appearing tube, and when a casing blows out or is punctured, air escapes immediately from the outer tube, but can escape from the inner tire only through a tiny vent, thus allowing the driver ample time to bring the vehicle to a safe stop.



Among the localites who rode in the passenger-car while the blowout tests were being made was Rae Williams, Akron's chief of police, who related over the loud-speaker system after his ride, that he had felt no change in the car's course despite the blowout and the speed at which the car was traveling.

For further information on the Goodyear LifeGuard inner tube, address L. J. Bornhofen, Goodyear Tire & Rubber Company, Akron, Ohio. . . . Mention of FLEET OWNER always helps.

Gar Wood *Offers* Two *New* Products

GAR WOOD Industries, Inc., Detroit, has recently announced a new "Truckveyor" which offers a clean, quick and economical way to deliver coal by eliminating wheeling and shoveling. It is illustrated above. . . . Another new Gar Wood product is the "Load-Packer," illustrated below.

The Gar Wood "Truckveyor" makes it possible for a straight dump-truck to do the same work as a high-lift or double-elevating unit, such as chuting coal over long distances, into elevated bins and over terraces. At the same time it reduces the overall height of the body as compared to a high-lift, eliminating excess weight, and permitting more payload to be carried at considerably lower cost on the same size truck, according to Gar Wood engineers.

The "Truckveyor" does not interfere with the use of the truck as an ordinary dump unit, when required, and it is not limited to coal deliveries, but may be used for other commodities as well. Unloading with the "Truckveyor" is done to the right or left side of the truck into an elevated opening. It can also be used in combination with an auxiliary chute to clear the sidewalk, fence, hedge and terrace. A special drive for chuting to the rear of the truck is also available.

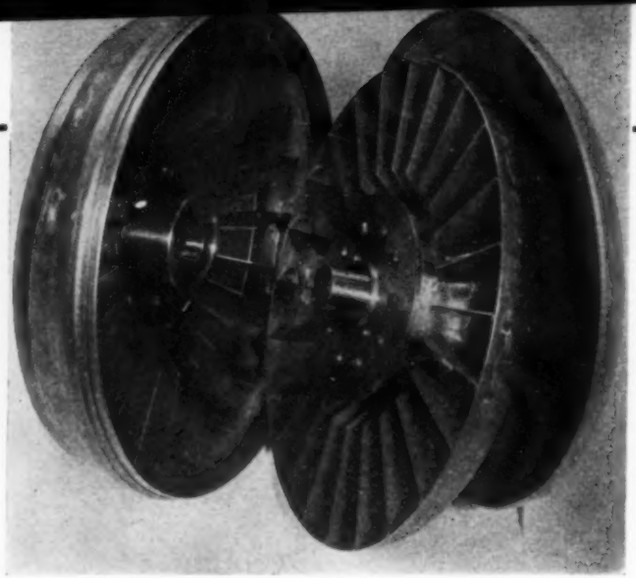
The "Truckveyor" consists of a strong, aluminum-alloy frame supporting a heavy-duty, 8-inch, rubber belt on two, 4-inch, aluminum pulleys, one at each end. The drive pulley has a right- and left-hand gear box operated by a flexible shaft which is connected to the truck power-take-off by means of an auxiliary shaft and universal joints. Hinged baffle-plates and extension sides on the conveyor frame are provided to prevent spillage. When not in use, the "Truckveyor" is carried in a compartment built inside the body, or held on the outside by retaining brackets.

The new Gar Wood garbage and refuse unit, the "Load-Packer," is a modern, sanitary, all-enclosed body. It compresses, like a hydraulic baler, all kinds of bulky rubbish and garbage into a compact-mass, full-capacity load that is much greater in weight than the usual loose load. When the load is compressed, water and other liquids are squeezed out, making the refuse and garbage burn quicker, thereby effecting economy at the incinerator, according to W. H. Hammond, sales manager of the hoist and body division of Gar Wood Industries, Inc.

The "Load-Packer" can be built in various lengths, widths and heights to fit any truck or trailer chassis. The loading trough located close to the ground, simplifies loading by shovel or from baskets and cans. The garbage and rubbish are not exposed and odors are confined. Papers cannot blow off. Every available cubic foot of the body can be filled. The body can be cleaned easily.

A Gar Wood hydraulic hoist dumps the load in the conventional manner. Another set of cylinders opens the endgate to give ample clearance. A retainer plate keeps garbage already packed from falling back into the trough. This (*Please turn to page* 55)

THIS is the new all-enclosed Gar Wood Load-Packer. . . . It operates like a hydraulic baler and compresses garbage and rubbish into a compact, full-capacity load. . . . The picture at the top of the page shows the new Gar Wood Truckveyor for coal delivery.



Chrysler Offers "Fluid Drive"

•

NEW DEVICE is "fluid flywheel", for use on passenger-cars, doing away with conventional clutch and providing several interesting features, including infinite ratio and "no-back".

THE engineering ideal of a car that under all ordinary conditions may be driven without any necessity for the use of the clutch or gear-shift lever has been attained in the "Fluid Drive," standard equipment on the Chrysler Custom Imperial line for 1939. This is an entirely new adaptation of a principle of transmitting power from the engine to the rear wheels, developed by Chrysler Corporation engineers and now used for the first time in American passenger cars.

It gives to a car propelled by the conventional type of gasoline engine all the flexibility of steam or electricity, without the disadvantages that caused those mediums long ago to be abandoned for personal transportation. Its practicability has been proved by Chrysler engineers in laboratory and road tests and is being further proved by cars now in the hands of private owners.

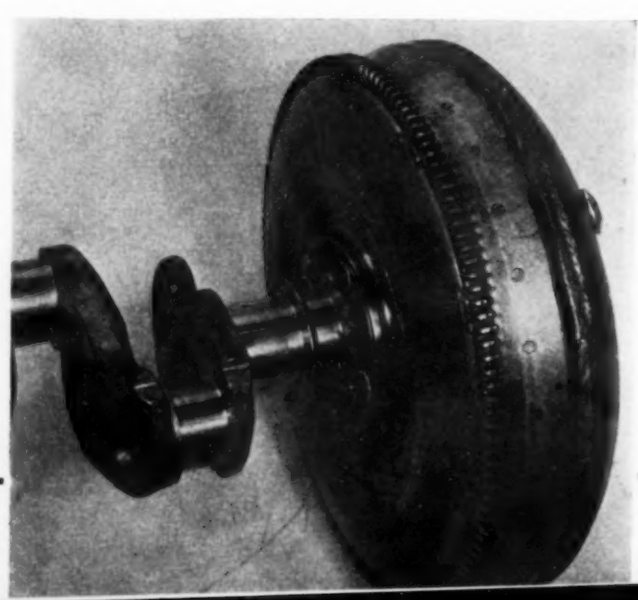
The fluid drive is a device interposed between the engine and the driving train to the rear wheels. Perhaps the easiest way to explain the operation of so unusual a device is to compare it with a simple and well-known mechanism of similar character. For this analogy, take two ordinary electric fans facing each other, about three inches apart. If one fan is started, the air-blast from that fan will strike the blades of the second fan and start them rotating. Thus the second fan receives energy from the first fan through the medium of the air, which becomes the energy carrier. This is essentially the principle upon which the fluid drive works. In this case the shape of the fan blades is changed, and the air is replaced by oil. To hold the oil in, both fans are enclosed in a steel housing, which is nearly full of the fluid. One of the fans, which now becomes a paddle, since it is moving oil, is attached to the crankshaft of the engine.

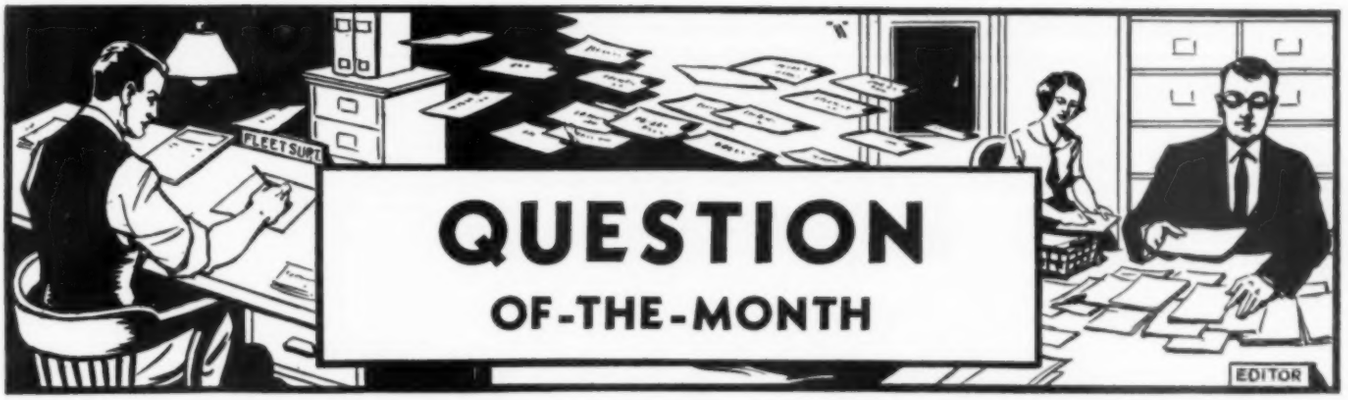
Facing this first paddle, called the driver, is a second paddle, called the runner. This runner is connected to the rear wheels through a suitable drive train of conventional type. Hence, in operation the engine turns the first paddle, or driver, which pumps oil through the blades of the second paddle, or runner, and the energy in the moving oil makes the runner turn, thus turning the rear wheels. The important point to notice is that there is no mechanical connection between the two paddles, and hence none between the engine and the rear wheels. This is what makes the operation of a fluid drive car so smooth, as no shocks may be transmitted through the oil.

We show two closeups of Chrysler's new fluid drive. In the lower photo showing part of the crankshaft, the fluid drive is seen enclosed in its steel housing. The upper photo shows the mechanism opened to reveal the 22 vanes of the driver, and the 24 vanes of the runner.

Due to the necessity of using the oil over and over again to carry energy back and forth from the driver to the runner, it is necessary to alter the shape of the paddles from the simple fan blades. The two paddles used are similar in shape to the two halves of a tire which has been sliced in two around the tread. The space on the inside of these paddles has been divided into many chambers by vanes, similar in the tire illustration to semi-circular plates extending from the under side of the tread to the rim, contacting the wall of the tire all the way around. Imagine, then the two halves of the tire mounted so as to face each other about one-quarter inch apart, both of these halves being enclosed in a housing full of oil. When the engine turns the half attached to it, oil is thrown outward by centrifugal force, following the wall around, and is finally thrown across the one-quarter inch gap and

(*Please turn to page* 56)





Fleet Experiences *with* Engine Thermostats

(Here's How You Can Get the Complete Picture on this Controversial Subject:)

ENGINE Thermostats are important; strange that we have not had a survey on this subject before. Here it is. . . . Since *all* of us operate engines, this questionnaire should prove quite timely. . . . It's a subject suggested by a fleet man.

The questionnaire is the *first* step. In return for a few minutes of your time in filling it out and sending it back to us, you will receive *your own* private, personal copy of the complete picture. We do all of the *hard work*, digesting and totaling the replies—and *you* get the *benefit!*

Names of fleets or executives are *never* mentioned or disclosed in any way. So don't hesitate to participate. You can *trust* us! The only thing we give out is the total, the trend, the popularity of relative makes, etc.

Once you participate, we feel sure that you will do it regularly. Your cooperation is appreciated.—H.C.F.

(Please tear out and mail to The Editor, Fleet Owner, 90 West St., New York, N. Y.)

Question No. 95—Engine Thermostats

What percentage of the vehicles in your fleet use engine thermostats?.....% (Rough guess will do)
Where thermostats are *not* originally furnished, do you install them later? ☐ Yes; ☐ No; ☐ Sometimes.
Is it your practice to ever *remove* thermostats, for warm-weather operation? ☐ Yes; ☐ No; ☐ Sometimes.
Do you periodically check thermostats (*be frank*) for accuracy and functioning? ☐ Yes; ☐ No.
If so, how many times per year do you make such a check-up? ..... (*Times per year*)
Do you periodically check the heat-indicator on the dash, for accuracy? ☐ Yes; ☐ No; ....Times per yr.?
In your opinion, at what temperature should the thermostat open?..... (Degrees F.)
Should *all* engines, in your opinion, be equipped with thermostats? ☐ Yes; ☐ No; ☐ Winter only.
Do thermostats help to prevent excessive dilution of crankcase oil? ☐ Yes; ☐ No; ☐ No proof.
When ordering thermostats, have you preference for any particular make? ☐ Yes; ☐ No.
If so, please be kind enough to tell us the make you prefer..... (*Confidential*)
Where do you buy thermostats? ☐ Vehicle Dealer or Fac. Branch; ☐ Jobber; ☐ Others?.....
What are your most common troubles with engine thermostats? (*Please explain*) .....
.....
.....
What is the average life of engine thermostats in your fleet? (*Please answer in years*).....Years
What sort of radiator protection do you use for cold-weather operation? (*Please check any that you use*)
☐ Automatic Shutters ☐ Cardboard Fronts ☐ Fabric Fronts Others? .....
☐ Manual-Op. Shutters ☐ Metal Fronts ☐ Leatherette Covers .....
Do you agree with the statement that thermostats and radiator-coverings of *some* kind, properly used, help to provide quicker warm-up, lessen oil-dilution and promote longer engine life? ☐ Yes; ☐ No.
REMARKS (Let's hear from you) .....
.....
.....
How many vehicles in your fleet? (Please indicate below)
Trucks..... Tractors..... Trailers..... Pass. Cars..... Buses..... Miscellaneous.....

Note: If you cooperate with us and fill out this questionnaire, you will be entitled to a tabulated report covering all of the answers.

Swap your transportation experience with other fleet operators in this easy, convenient way. We do the work. You get the benefit.

Name of Firm .....
Address .....
City and State .....
Your Name ..... *Position*.....

A "FLEET OWNER" SURVEY on TIRE RETREADING (Continued)

(*Continued from page* 26)

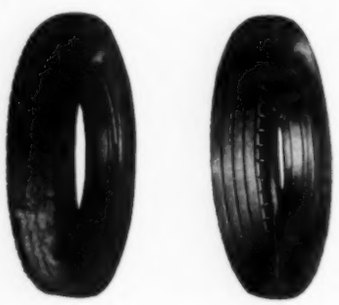
data were found exceedingly interesting. Some operators, it should be noted, mentioned *more than one* of the various causes of tire failure, when retreaded tires were used.

In reviewing the answers to the next question, "*To what do you attribute your troubles with rebuilt tires?*", it is interesting to note that 81 fleet operators were frank enough to admit that they could trace many failures to the fact that the tire was *not fit* to be retreaded. This would indicate that many retreading shops are still attempting to retread or recap tires which they have no moral right to handle. We are told that from 20 per cent to 50 per cent of all tires *offered* by fleet operators, are *not* suitable for retreading or recapping. This large number of answers indicates that more casings should be rejected by the retreader, and that you, as fleet men, should not try to retread *everything* that looks like a tire. Additional reasons given by fleet men as to why their rebuilt tires did not stand up, included the methods used, the materials used, and both.

Most of the participating fleet operators in this survey have kept careful records of the comparative cost of retread jobs only as compared with the cost of new first-line tires of the same size. In answer to the next question, "*What percentage of the original new tire cost, does each retread or recap job cost, average?*", fleet men gave percentages ranging from as low as 15 per cent to as high as 75 per cent. . . . Averaging all of the percentages given, produced a general average of 40 per cent. According to the figures supplied by 235 fleet operators, this indicates that the average cost of retreading and/or recapping tires (by various methods) is about 40 per cent of the cost of a new tire of the same size. We understand that these figures apply to *net* costs and not to so-called "list" prices. Numerically, however, most of the answers ranged around 50 per cent of new tire costs, the lower figures given helping to bring the "average" down. A detailed breakdown of all the figures given appears on our confidential mimeographed summary, furnished to those who participated.

Outstanding cases have been called to our attention, where the same tire had been retreaded or recapped several times. So we injected the following question as next on our list: "*How many times, in your service, can the same tire be retreaded or recapped?*" . . . Most of the answers indicated that "once only" is enough times to rebuild a tire, 141 operators reporting in that direction. The next highest number was "twice," suggested by 57 operators. A few others gave figures ranging from 3 to 5 times per tire, but these, indeed, were in the minority. . . . One man said "One retread and two recaps" for each tire. We have no comment to offer on the above, although we are told that if the tires are "pulled" in time, more than one retreading or recapping *might* be possible on each tire.

In answer to our next question, "*What type of firm does your retreading?*", it was interesting to note that apparently the independent retreader is doing the bulk of fleet work—at least according to *this* survey, for, 107 operators reported that they give their retreading work to an "independent tire rebuilder." . . . 86 fleets have their rebuilding done by tire manufacturers' branches or authorized agencies, while 54 fleets patronize *both* types of tire retreader. One fleet (a real big one) reported



that they operate their own tire retreading moulds, doing all of their own work in their own shop.

Realizing that the decision as to whether or not a tire is *fit* to be retreaded or recapped is of *vital* importance, we next asked, "*Who decides as to whether or not your tires are fit to be retreaded?*" . . . 148 fleet men replied that the tire retreader makes this decision, while 52 operators said that they themselves decide this. Another 50 fleets declared that both the retreader *and* their own men, jointly, make this decision, which is smart, because there are some fleet men who would like to retread *every* tire, just as there are some retreaders who are willing to gamble "the other fellow's" truck against a tire that should not be retreaded. So, we think that a joint consultation is quite o.k. because, two heads are better than one, you know.

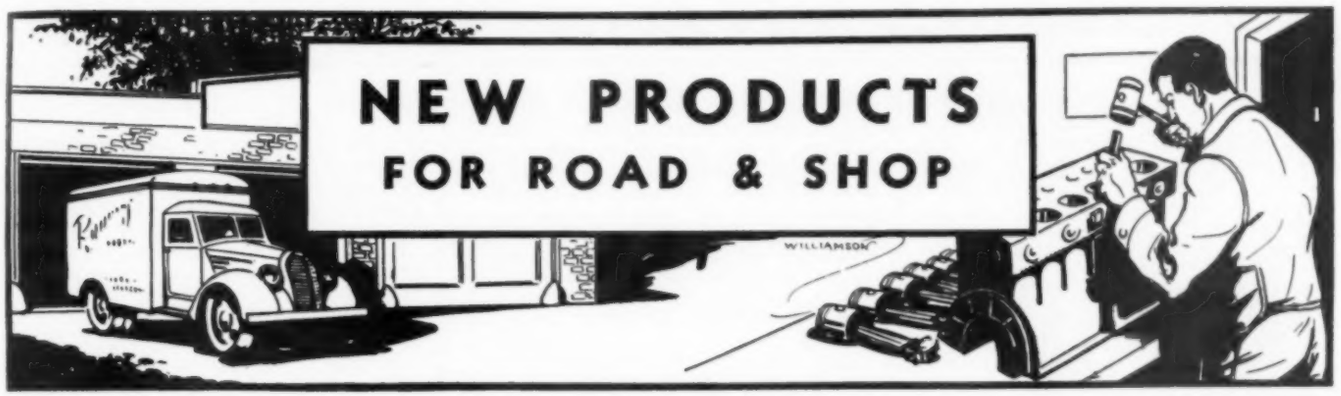
And here is where we ran into a question that was difficult to word properly, and perhaps equally difficult for you to understand. We asked, "*At present costs, approximately what OVER-ALL saving in TOTAL fleet tire costs is achieved through the use of retreads or recaps?*" . . . In other words, what we wanted to determine was the *total* saving traceable to the practice of retreading. . . . The answers to this one revealed that most operators found it difficult to determine exactly what the use of retreading was saving them over the use of all new tires.

Although 4 operators reported a LOSS due to retreading, and 30 fleet men declared they could trace *no* saving, the actual savings given in percentages ranged from as low as 1½% to as high as 80%. The most popular (numerically) savings reported ranged from 18 to 40 per cent. It is quite obvious that those fleet men who gave total over-all savings on tire costs due to retreading, in the *high* percentages, either did not understand the question, or else they miscalculated.

For example, in order to realize a 45 per cent saving in total, over-all tire costs (assuming that each retread job costs 40 per cent of new tire cost, as previously averaged), one would have to retread or recap EVERY tire 3 times, and would have to get 100 per cent of new tire mileage from the retread, each time. . . . Since we are quite confident that such an ideal condition is just not in the cards, we did not seriously consider those total over-all savings which ran above 40 per cent. That's one reason why we did not try to strike an average to the answers to this question. . . . Perhaps many operators just figured that if their retread job costs half of new tire prices, their total over-all saving is 50 per cent, which is *wrong*, of course, because *new* tires must be bought from time to time, and it takes a lot of good, accurate bookkeeping to find a total over-all saving. We think that a period of a year would be a good one to select, if you are really serious about sitting down some cold night and figuring it out for yourself.

The concluding questions in our retreading survey asked for systems and makes of retread rubber (camelback) that are now being used by fleet operators, and also which systems and rubber are preferred. Considerably less than half of the participating fleets mentioned the makes of moulds and rubber used. All of this information, as well as the confidential data as to makes preferred, and the intimate detailed breakdowns of all figures given here in brief, are included completely on our typewritten summary to this question. As before stated, copies have been furnished to those fleet men who participated. Those who did *not* work with us on this questionnaire will have to be satisfied with the brief resumé given in this article. However, if any fleet operators are desirous of getting a copy, we will be glad to send one to you, in exchange for this month's

(*Please turn to page* 51)



Oakite Announces Self-Lifting Steam Gun

A HIGHLY improved steam gun, reported to represent a marked advance in this type equipment, has been announced by Oakite Products,

Inc., 52-G Thames Street, New York, N. Y.

In addition to incorporating the advantage of light weight and ease of use, the basic improvement of the Oakite Steam Gun (patent applied for) is its self-lifting feature. This new gun automatically lifts the cleaning solution from floor level to a height of over 10 feet, without the aid of pumps, injectors, means of gravity feed or other auxiliary apparatus, and delivers a most effective wet spray on the surfaces to be cleaned. All that is needed to operate the gun, according to the maker, is the necessary steam and solution hoses, steam supply and an open top drum or other easily obtainable open solution container.

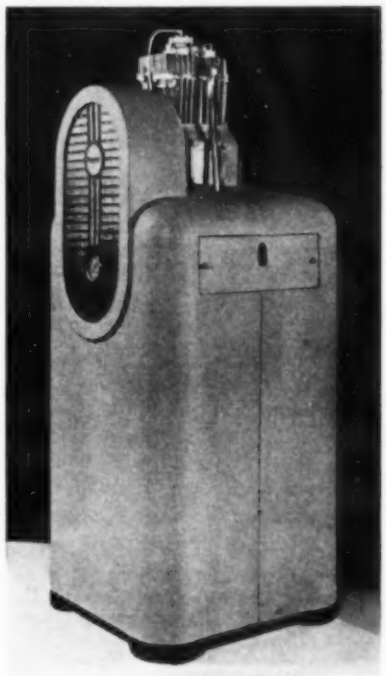
To meet individual requirements, the gun is manufactured in two different sizes. Equipped with an air-cooled handle, the small unit, Model No. 384, which is 3½ feet overall length and weighs 5¾ pounds, is designed for cleaning automobiles, trucks, tractors and similar types of equipment; also for cleaning machinery, equipment, floors, etc. The large unit, Model No. 385, is 7½ feet overall length, weighs 13¼ pounds, and is designed for use on the heaviest steam cleaning operations where a long gun is required to reach the highest parts being cleaned.

For further information address Oakite Products, Inc., 52-G Thames St., New York, N. Y. . . . You'll mention FLEET OWNER, won't you?

Cabinet-Type Compressor

HERE is a new cabinet-type air compressor, introduced recently by Manley, for which is claimed freedom from vibration and noise. It is built in various capacities, 5 to 13 cubic feet per minute and 1 to 3 h.p.

The control panel gives access to the pressure and motor-protection switches, safety and shut-off valves, air-receiver and crankcase drains. Saving in floor space is stressed by the maker, as the space occupied by it is only 25 x 25 inches.



A pressure gauge is set in the grill, which also acts as a belt guard. Cooling is by a constant blast of air thrown back from the fan-type flywheel over the cylinder fins. Motor is mounted on a swivel bracket.

An automatic unloader keeps a constant tank pressure and prevents the compressor from starting against full head pressure. Other features include balanced crankshaft, enclosed crankcase, Lynite connecting-rods, Timken bearings, constant-level oiling system, air-filter and muffler.

For complete details, prices, etc., write to O. R. McDonald, c/o Manley Manufacturing Division, York, Pa., mentioning FLEET OWNER, if you don't mind.

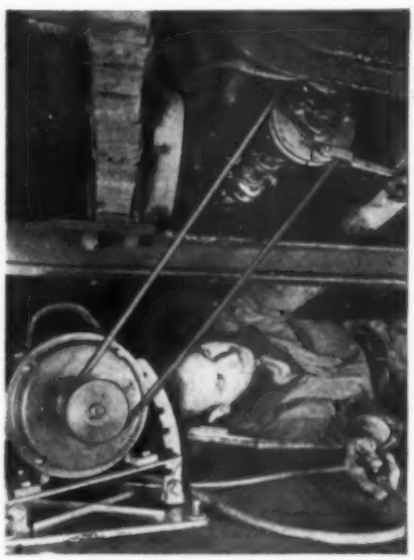
Portable Crankpin Grinder

LEMPCO Products, Inc., Bedford, Ohio, announces the new Lempco Portable Crankpin Grinder. It is shown here truing a scored crankpin, right in the chassis.

Three types of set-ups are possible: (1) In the chassis. (2) In convenient bench mounting brackets, supplied as standard equipment. (3) In the block, for jobs in which the block and crankshaft have been removed from the vehicle.

The outfit consists of an electric motor mounted on adjustable, swivel-type base, equipped with ratchet, for easy belt adjustment and furnished with two grinder bodies of different widths. The latter are split, for easy application to crankpins. Also furnished are 21 abrasive holders, 21 sets of abrasive shells—coarse, medium, fine and polish grades. Two V-type belts are also supplied, as well as oscillating handle and kit of tools for application and a durable case for the entire outfit.

The portability of this unit, as well as the accuracy, is stressed by the

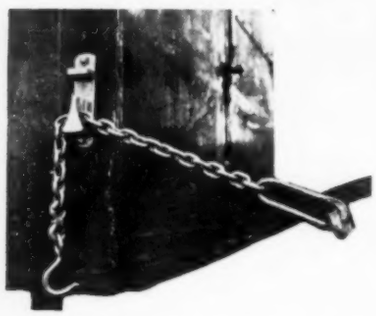


maker. It is said that any mechanic of average ability can produce a perfect job of crankpin truing, and in a minimum of time. . . . For further details address Lempco Products, Inc., attention of Frank Lynch, Bedford, Ohio. . . . We always appreciate it when you mention FLEET OWNER.

Adjusts Tailboard Height

A NEW truck tailboard adjusting unit is offered by W. R. Lewis Mfg. Co. of Newburgh, N. Y., under the trade name of "Loclink."

It was designed by a truckman, to provide a quick, efficient and safe



means for holding a tailboard in any desired position, and to do away with the necessity of using long chains under the tailboard.

Any desired angle of the tailboard can be obtained by simply dropping the proper chain link into the slot. There is no necessity for twisting the chain to shorten it, as has been the common practice, and the possibility of hooks being broken or straightened out, is done away with entirely.

"Loclink" is a casting made of high grade electric steel, and is designed to carry safely, any load that can possibly be carried on a truck tailboard. It is available in several sizes and installation can be made quickly and easily by either owner or body builder.

Complete information and prices can be obtained by writing to W. H. Lewis Mfg. Co., P. O. Box 624, Newburgh, N. Y. . . . Mention of FLEET OWNER is always appreciated.

•

Synthetic Gasoline Hose

THE DEVILBISS Company has announced the addition of a synthetic rubber gasoline pump hose to their line of solvent-resisting hose. This new hose features high resistance to gasoline and oil, positive seepage protection, controlled hose expansion and minimum flow-resistance. Full protection against fire hazards without loss of flexibility is provided by an improved design of woven wire static eliminator.

Development of this new item began in 1934. The long experience of The DeVilbiss Company previous to this, in the manufacture of hose for conveying toluol, turpentine, paints, lacquers, and other particularly destructive solvents of rubber, proved invaluable in the planning and manufacture of gasoline hose. Since then, the hose has been time-tested, job-tested, and submitted to far worse conditions than any under which it might actually be used. The perfected hose now announced is equal to every demand for quality gasoline hose, it is claimed.

Specially compounded material and construction of the inner wall and outside cover of the hose are said to prevent seepage. Both inner liner and cover are specially constructed to withstand the severest weather conditions. Cover is also extremely resistant to oil and abrasion, the makers state.

Hose, method of attaching couplings, and static eliminator have been tested and listed under Reexamination Service of Underwriters' Laboratories, Inc. Complete information may be secured from The DeVilbiss Company, Toledo, Ohio. . . . You'll mention FLEET OWNER, won't you?

•

New Rubber Lubricant

A NON-PETROLEUM lubricant for use as an anti-squeak for all rubber parts and metal-to-metal contacts on the chassis of automobiles, buses and trucks has been developed in the research laboratories of E. I. du Pont de Nemours & Company, Wilmington, Del.

The new product, known as "Orel," resulted from the efforts of du Pont chemists to provide a lubricant harmless to rubber, yet one that would quickly penetrate and efficiently lubricate rubber bearings and all metal-to-metal chassis bearings. The lubricant is not for use where it will come in contact with car-body finishes or in the crankcase, transmission, differential or pressure lubrication fittings.

•

Presents Data on House Trailers

A SURVEY of all state provisions which apply to ownership and use of house trailers has been completed by the National Highway Users Conference, with the results being presented in booklet form. . . . Information is presented, in chart form, on: registration data, non-resident privileges, equipment requirements and size restrictions.

Data Book on Farm Tires

CONTAINING more solid statistical data than its previous volumes on the same subject, The B. F. Goodrich Company, Akron, Ohio, has recently issued a new 68-page Tractor and Implement Tire Handbook. It is a ready reference work for manufacturers, retailers and consumers in the tractor and implement field.

Fourteen pages are devoted to an illustrated description of the company's line of low-pressure pneumatic tires for agricultural service, and recital of the advantages of rubber tires over steel wheels.

Five pages are given to data on Goodrich tractor and implement tires, and this is followed by 40 pages of specifications for tractor and farm implement tires and wheels.

These specifications include those for beet pullers or lifters, corn binders, grain and rice binders, combines, corn pickers and huskers, corn shellers, cultivators, dusters, ensilage harvesters, grain drills, grain elevators, harvesters, hay balers, pick-up and stationary types, presses, hay loaders, huskers and shredders, lime sowers, listers, planters, bedders and middle breakers, mowers, plows, potato diggers and planters, rakes and tedder, side delivery and rakes, sweep or buck, silo fillers, orchard sprayers, potato sprayers, spreaders, threshers, tongue trucks for mowers and binders, transplanters, farm wagons and trucks, freight trailers and windrow harvesters.

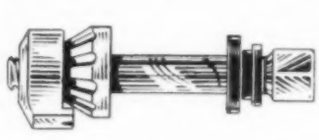
Two pages are devoted to a description of liquid filling of tires to eliminate steel weights, and the tables for mixing 20 per cent anti-freeze solution for any desired weights. . . . For your free copy address B. F. Goodrich Company, Akron, Ohio. . . . Mention of FLEET OWNER always helps.

•

Device for Ford Brakes

THIS item is called the "Super Brake Floater," for which is claimed that it will eliminate chatter, groan and fade from brakes on Ford cars which may have this difficulty.

The "floater" is described as a simple device that insures full-circle contact of both brake shoes, giving com-



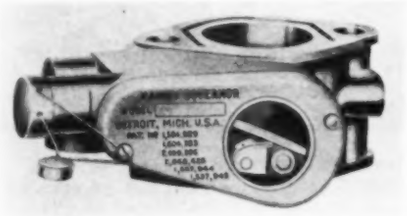
plete self-energizing results, and braking action comparable to that obtained with hydraulic brakes.

Two models are supplied—one for Ford 1928-1934; the other for 1935-1938 models. Installation is easily made. The makers state that the device has been fully tested in actual service on all models, under all sorts of weather and driving conditions.

For further information, prices, etc., address Super Brake-Floater Mfg. Co., 4616 W. 20th St., Chicago, Ill. . . . Mention of FLEET OWNER is always appreciated.

"Visible-Action" Governor

VOLUME deliveries of a new "Visible-Action" Governor for truck, bus and car engines have been begun by the Handy Governor Division of the King-Seeley Corp., Detroit, Mich.



The new model is based on the standard Handy Vari-Speed design which has been improved by the installation of a substantial glassed-in window, affording plain view of the governor's instant response to all throttle positions. Movement of the governor is emphasized by a brilliant spot of red on the patented Handy cam.

Ease of inspection and consequent freedom from tampering are obvious advantages of the "Visible-Action" model, which will be sold only through the nation-wide organization of Handy distributors.

For further information, prices, fleet discounts, etc., address Handy Governor Division, King-Seeley Corporation, Detroit, Mich., mentioning FLEET OWNER, if you don't mind.

•

Hawkinson Treads

THERE are now over 260 tire rebuilders authorized to apply Hawkinson Treads, by means of patented Hawkinson treading equipment.

In the Hawkinson system a new strip of camel-back is vulcanized to the carcass by a patented method. It is a "rubber-to-rubber" job. This process utilizes external metal bands

placed around the tread of the tire, through which the heat is run for the vulcanization process. It is claimed that the heat does not reach the fabric or inner rubber by this method, and that the tread is applied under natural running conditions.

It is pointed out that all Hawkinson tread shops have had their personnel thoroughly trained in Hawkinson methods; that they have the proper equipment and materials; and that they are instructed to rigidly inspect every carcass before accepting it for the new tread.

Complete information about Hawkinson Treads, together with the name of your nearest tire rebuilder using this method, will be sent on request. Address Mr. Paul Hawkinson, 2101 Kennedy St., N.E., Minneapolis, Minn. . . . It's always appreciated when you mention FLEET OWNER.

•

Automatic Safety Chock

HERE IS a brand-new safety device, designed especially for tractor-trailer combinations, to prevent the unit from rolling backwards down a hill, due to poor traction, failure of the power-plant, brakes or other emergencies.

As shown in the photograph, the Automatic Safety Chock consists of a strongly built "cradle", permanently affixed to the undercarriage at the rear of the unit, and scientifically mounted so that it will be self-operating, once released. Control is from a pull-cable leading to the driver's cab.

When released, the Automatic Safety Chock operates automatically, progressively halting the backward motion of the vehicle and finally ending up by raising the entire load off the back wheels, as shown. Angle-iron cleats bear directly on the road surface and are said to furnish "anchorage" against any backward motion down-hill.

Although designed for safety, it can also be used as a convenient jack for changing tires on the trailer, as the wheels may be raised free of the ground by backing up against the device, whether on a hill or on level ground. Naturally, it is easier to start up a hill, "taking off" from this device.

For complete details as to construction, installation and prices, write directly to E. M. Spelman, c/o The Homobile Company, 7801 Madison Ave., Cleveland, Ohio. . . . You'll mention FLEET OWNER, won't you?

•

New "Auto-Rail" Tires

RECOGNIZING the increasing interest in transporting goods in the same vehicle both on the rails of the common carriers, and on the highways, a special "Auto-Rail" tire is announced by The B. F. Goodrich Company, Akron, Ohio. The Goodrich Company has been furnishing tires used on the Auto-Railer, manufactured by the Evans Products Company, Detroit, Mich.

The new tire is a 32 by 6 heavy-duty size, the size most commonly used on the Evans Auto-Railer. Railroads have been purchasing many of these vehicles, especially for branch line service and maintenance departments.

The new Goodrich tire utilizes the tread design of the new Safety Silvertown passenger-car tire recently developed, which claims non-skid effectiveness on wet pavements as its principal feature. The vents provided in this tread design of the Auto-Rail tire serve to drain the water off the railhead and wipe it dry.

The tire has all the features of the company's line of truck and bus tires, including "Plyflex", for distribution of stresses throughout the tire; "Plylock", protecting against short plies tearing loose above the beads; and the new "Hi-Flex" cord, which retains its stretch and protects against high temperatures, it is claimed.

Discussion of these and all other pertinent facts on its line of commercial tires are contained in the *"Operator's Handbook"* which will be sent by the company, upon request. . . . When writing for your free copy address W. C. Bray, c/o B. F. Goodrich Company, Akron, Ohio, mentioning FLEET OWNER, if you don't mind.

•

New "Hill-Master" Governor

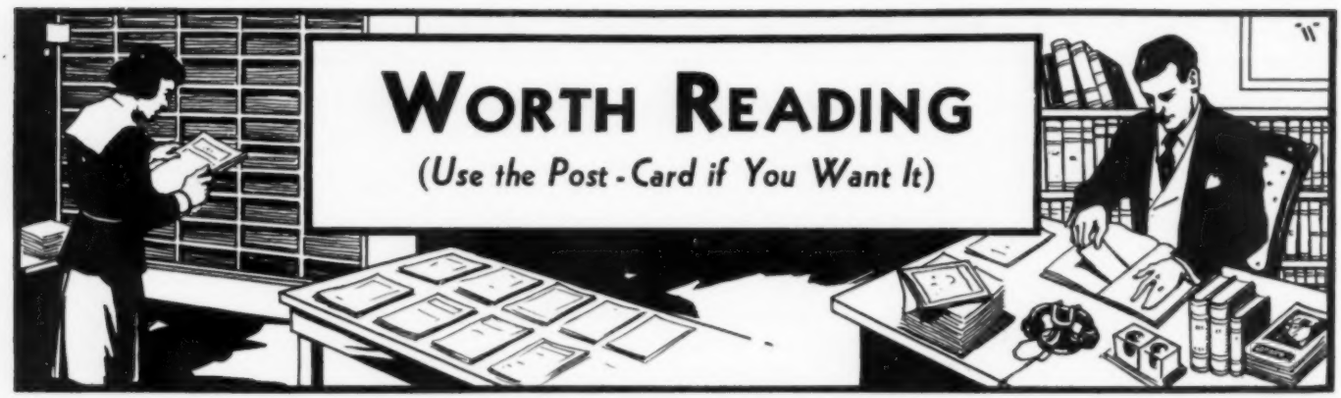
KLEMM Automotive Products Co., Chicago, Ill., announces their new "Hill-Master" governor, which has as its principal feature, a device to cut out its operation on hills and inclined pulls, thus permitting unrestricted motor operation when full power is needed.

Just as soon as the vehicle gets back on level road, the governor goes back into full operation, we are told, protecting the motor against abusive

use and governing the speed of the vehicle to the pre-determined limit.

On the straightaway, the new "Hill-Master" governor is said to fully govern the engine in all speeds, against excessive revolutions per minute in all gear ratios.

The price of this governor is said to be in the same range with standard governors that do not have this feature. For further details and fleet discounts, address J. F. Austin, c/o Klemm Automotive Products Company, 1718 N. Damen Ave., Chicago, Ill. . . . Mention of FLEET OWNER always helps.



WORTH READING

(Use the Post-Card if You Want It)

465. AXLE-RATIO CALCULATOR. . . . Here's a handy little gadget, made of cardboard, and built just like a 2-speed axle. . . . By manipulating the lever on it, it shows just what happens when you shift from the "speed" ratio to the "power" ratio, in the popular 2-speed axle that is used by many truck makers. . . . It also shows, in *both* axle positions, just what the gear ratio is, the grade ability, the motor r.p.m., the engine revolutions saved—and other pertinent data. . . . This device, frankly, is a "gadget". . . . After it has served your purpose, bring it home for Junior to play with. . . . We guarantee he'll enjoy "shifting the gears". . . . One comes to you, with the axle maker's compliments, if you mention Number 465 on the post-card.

•

466. DATA BOOK ON STEELS. . . . The new high-tensile steels are coming into wide use as material for truck bodies. . . . A new 48-page book entitled, "*A. W. Presents Dy-Nel,*" gives full details of the savings in weight and cost made possible with this new high-strength, flat-rolled steel. . . . Diagrams, tables and charts cover a wide range of tests and properties. . . . To executives, this book gives a quick picture of performance and costs. . . . To engineers, it gives complete fabricating and design properties and tables of sizes and weights. . . . Number 466 brings a free copy. Use the post-card, please.

•

467. DIESEL BULLETINS, . . , Here is some impartial information covering the latest *automotive* Diesel engines, with especial emphasis on their lubrication. This literature is issued in the form of illustrated bulletins. Data on the Cummins, General Motors, Buda, Hercules and Waukesha engines is included. . . . You will find this material strictly informative, and without advertising of any kind. Number 467 on our postcard brings these *free* bulletins promptly. . . . Their title is, "*The Fleet Engineer.*"

•

468. MOTOR REPAIRING. . . . "*Engineered Motor Repairing*" is the title of a 30-page book just reaching our desk, which gives plenty of constructive information on reringing motors, cylinder reconditioning and complete motor-rebuilding. . . . Another booklet, "*Piston Ring Engineering Course,*" arrived at about the same time. . . . Neither of these books contains any advertising matter, except of course, they refer to their own types of piston rings for typical installations. On the whole, you will find both of them to contain lots of up-to-date information on curing oil-pumping, piston-slap and how to properly recondition the modern high-compression engine. . . . Free copies of *both* of them will be sent, if you place Number 468 on our post-card.

•

469. REFINISHING EQUIPMENT. . . . What with Spring being around the corner, you no doubt will be about to "brush up" (no pun) on your spray-painting equipment, preparatory to having your vehicles look their best when the better weather comes. . . . We have just received a 48-page, illustrated catalog, covering *everything* in the painting line—guns, cups, nozzles, hose, fittings, booths, ventilators, stripers, air-compressors and complete outfits. . . . Everything is beautifully illustrated, described and priced. . . . Personally, we like to browse through catalogs and we think you do, too, regardless of your intentions to buy anything. . . . If you want a *free* copy of this new catalog, just indicate it by placing Number 469 on our post-card.The mail-man will bring it promptly, without obligation.

•

470. COMPRESSED AIR MANUAL. . . . Greasing, Tire-Inflation, Motor-Cleaning, Spray-Painting, Hoist-Operation and General Uses of Air in the Shop are subjects covered in this new Air Manual and Catalog. . . . Through the use of it you can quickly figure your compressed air requirements, no matter what air-operated equipment you are using. . . . Besides, it's a dandy catalog on air-compressors to have in your files. . . . Number 470 on the post-card brings this new book of Brunner's, by *mail* and without obligation.

•

471. ELECTRICAL MANUAL. . . . This is a brand new automotive electrical handbook containing tune-up data similar to the three articles recently published in this magazine on electrical trouble shooting; only they are more elaborate and complete. If you enjoyed reading our electrical articles, we are sure that you will want a copy of the complete manual for taking home to read. . . . It's title is "*Copper Nerves*" and you can get a free copy, which will be sent by *mail*, if you mention Number 471 on our post-card.

•

472. BRAKE DATA. . . . Although we know that you are *not* in the brake business, we feel that you will find this *Flate Rate Chart on Brakes* of great interest, because it will enable you to determine what your brake relining *costs* should be. . . . All makes are listed alphabetically, by year and model. . . . With only one "look," you can determine at a glance the approximate charge of a re-line job, the cost of the materials and the types of lining suited to the particular brake mechanism in hand. . . . It also gives data on the length, width and thickness of lining required for each job. . . . A special table dealing with adjustments completes the chart, which is made up in folder form and is printed on heavy paper, so that it can be handled roughly without tearing, or mounted on the wall of the shop. . . . For your *free* copy place Number 472 on the card.

•

473. FREE SAMPLE. . . . Every once in a while we run across some worth-while sample of automotive merchandise to list in this department. This one is an assortment of automotive sand-papers and abrasive cloths, made up in a neat envelope containing about 12 large-sized sheets (5½ x 9 in.) and including all grades from the finest to the coarsest. . . . If you have not as yet used the *modern* type of sandpapers, you'll find a real treat in store for you—faster cutting and less elbow-grease. . . . Yours Truly learned a long time ago that it pays to spend a few cents more for sand-paper and save your muscles. . . . Number 473 on the post-card will bring the generous sample so that you can prove it to yourself. . . . Absolutely no obligation.

•

474. ELECTRICAL TOOLS. . . . Drills, Grinders, Valve Refacers, Flexible-Shaft Outfits, Disc-Sanders, Hole-Saws and other equipment are all contained in this new, big catalog—under one cover. . . . The catalog is new and fully illustrates, describes and prices the entire U. S. Electrical Tool Line. . . . When a catalog is a catalog, we say so, and don't try to disguise the fact. . . . Should you want a copy of this catalog for future reference—and without salesmen—just indicate it by placing Number 474 on the post-card. It comes by *mail*, as do all other items.

Retreading Survey

(*Continued from page* 46)

questionnaire, properly filled out. You will find the new blank on page 45 of this issue. If you want the retreading data, just write across the bottom of this month's blank, when you fill it out, *"Send the Retreading Summary"*. . . . We will be glad to oblige, and, then too, you will automatically receive the confidential summary to *this* month's questionnaire, just as soon as it is tabulated. . . . We think that that's as fair a way as any of drumming up new participants in our Question-of-the-Month Club; don't you?

Because we felt certain that someone would be sure to shoot this survey all full of holes, claiming that it was not made among the right people, for instance, we inserted a question, *"How are MOST of your vehicles operated?"* . . . The answers showed that all various types of operation were well covered in this survey. . . . 116 fleets reported that they operate only in slow-speed city work; 72 operate only in high-speed, inter-city work; and 46 fleets have vehicles operating in *both* classes of service. . . . This bit of information should serve to straighten out any who might be inclined to criticize this survey on the grounds that it is not universal.

Perhaps the remarks jotted down on the various questionnaires are more interesting than the figures themselves. We next asked, *"If you have discontinued the use of retreads in any way, or for any reason, please explain what your difficulties were."* Most of the difficulties mentioned were very similar to the "Unfavorable Comments" listed on page 28 of this issue. . . . It is only fair to state that all of the people making these remarks have not *completely* discontinued the use of retreaded or recapped tires, and also that some of these remarks date back to the early days of retreading, when materials and methods had not as yet been improved to the degree of workmanship that we know today. Be sure and read both sets of comments, pro and con, on page 28. Then form your own conclusions.

In writing this, something tells us that space will not permit including much more than a closing paragraph. We told you something of the type of operation of the fleets which participated. These 311 fleets are located in 43 states, and a few are in Canada, Hawaii and Puerto Rico. They are engaged in about 30 different industries, and include 21 fleets operating nothing but buses. Vehicles in these 311 fleets average 148. They total as follows: 27,012 trucks; 7,274 passenger-cars; 2,820 tractors, 4,674 trailers, 2,695 buses, 627 taxicabs, and 955 miscellaneous vehicles. The grand total of vehicles represented is 46,057.

So you see, folks, this survey is *quite* representative. We hope that you will participate in this monthly feature, in return for which you will get a private and personal copy of the confidential tabulation which we make. This contains all such information that we can't give here—such things as trade-names, etc.

This month's questionnaire promises to be unusually interesting, since it covers Engine Thermostats—something that *all* of us are interested in. If you feel that you'd like to get the confidential report which it will bring, just turn to page 45, tear out the page, fill in the answers to as many questions as you can (or as you care to) and send it back to us. Rest assured that everything is kept confidential, and that your name is *never* mentioned to anyone, or at any time. It's your cooperation that we need to make this thing a success. Thanks.

Philadelphia Show Cancelled

THE PHILADELPHIA Automotive Maintenance Demonstration, scheduled for March 7, 8, 9 and 10, has been cancelled. . . . The next Philadelphia Regional Show will be held in that city in 1940, from March 5 to 8, inclusive. . . . There seems to be definite opinion that this Show can best serve the trade by holding it every two years, instead of yearly, as has been the practice heretofore.

•

Goldsmith Joins Arrow Muffler

N. GOLDSMITH, formerly with Simmons Manufacturing Company, has joined the Arrow Muffler Company, as Sales Manager. . . . The Arrow Muffler Company is located at 1600 S. Laflin Street, Chicago, Ill.

AMAZING NEW DEVELOPMENT IN IGNITION!

2 COILS IN ONE

QUICKER STARTING

Spark output is automatically increased for starting. The only coil that makes up for the reduction in current available for ignition while the starter is drawing on the supply in the battery.

AUTOMATIC DUAL RATIO
(*patented*)

Parallel primaries 1 and 2 are both connected by control 3 for starting. As soon as motor begins to run, control 3 automatically disconnects primary 2, leaving primary 1 to take care of driving requirements.

GREATER OPERATING EFFICIENCY

The primary used for running is designed solely for that purpose. It makes the motor run better at all speeds.

Saves Contact Points

This coil does not draw excessive current at high speeds. So, contact points last longer. Wear and tear on the electrical system is reduced to a minimum.

SPECIAL TEST OFFER for Fleets of 10 or more Units: Write us for details today!

IVANO, INC. 123 EAST 21ST STREET CHICAGO, U. S. A.

IVANO Dual Ratio Coil

SAFETY

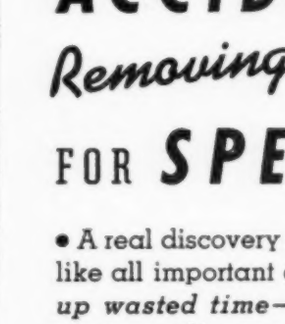
THE SERVIS RECORDER *Helps Prevent*

ACCIDENTS BY *Removing* the INCENTIVE FOR SPEEDING

• A real discovery it is, yet very simple like all important discoveries. ***Making up wasted time***—that's the cause of most speeding and accidents.

The cure? Make it impossible to "make up" wasted time. And that is what the SERVIS RECORDER does, by "drawing a picture" of all wasted time, so the driver can't make it up even if he does ***pull in on time.*** Write for folder—

"How to Prevent Trucks from Speeding and Having Accidents."



The SERVICE RECORDER Co.
1422 Euclid Ave., Cleveland, O.
Branches in Principal Cities

The Servis Recorder
Endorsed by Many Insurance Companies

424 Safe Drivers

(*Continued from page* 14)

The following methods are used in carrying out their educational program:

(1) *Driver Meetings:* These are held twice yearly and accident experiences are reviewed and discussed. Unsafe practices, the roots of accidents, are exposed and the men are instructed in safe driving habits. Safety movies are shown, and often speakers from Detroit's Police Safety Bureau or from a local insurance company are invited to address the drivers. In addition, the prevention of accidents is briefly discussed at all sales and merchandising meetings, so that the idea of safety is kept before the men at every opportunity.

(2) *Monthly Safety News-Letter:* This news-letter, regularly issued by the Safety Department, lists all of the month's accidents, names the drivers involved, explains the nature of the accident, the results, and the injuries sustained by victims. Special bulletins covering current conditions and predominating types of accidents are issued as needed.

(3) *Bulletin Boards:* These are placed in visible locations at each branch and display accident-prevention hints and cautions.

(4) *Accident Charts:* Placed alongside the bulletin boards are large charts telling readers how many days a branch has operated without an accident, and firmly implanting in the men a spirit of competition.

(5) *Award System:* A system of awards further bolsters the program. Safe-driving buttons are given yearly to men who have not had an accident for the period. As the drivers progress with clean records, new pins are awarded yearly, covering the entire no-accident period. The badges, distinctive in appearance, are worn on the coat lapel or on the cap.

The Detroit Creamery Company reports that its traffic accidents have been reduced 60 per cent since the adoption of this safety program.

As an added precaution, observation inspections are made constantly by the supervisors as they daily tour their territory. They watch for unsafe driving practices, correcting the employe as he errs. All parts of this program, working in perfect harmony, have given Detroit Creamery drivers their outstanding record.

Naturally, the best reduction in accidents came during the first three years of the plan's operation, but further improvement has been made yearly as employes became more and more safety-conscious.

As a result, 75 per cent of Detroit Creamery Company's truck operators are holders of safe driver awards. Their interest does not wane with the first year's button, but increases, adding more days, weeks, months, and years of safe driving to their records.

Today, a well-directed safety program is an important contributing factor toward the success of *any* business operating a fleet of trucks, large or small. It especially becomes a valuable asset to a company when it promotes the safety and well-being, not only of the people in its own organization but also of those in the community at large. The Detroit Creamery Company actively supports a strong program of accident-prevention, which, without a doubt, has been the means of saving human life and preventing countless injuries through the careful operation of its large fleet of trucks.

This is vital to a company contacting thousands of retail and wholesale customers every day in the year, and inevitably builds public good-will and enables a company to render dependable service to its customers. Incidentally, such a program also greatly reduces the high cost of repairs made necessary as a result of traffic accidents, cuts insurance costs, and is bound to make for more efficient truck operation.

So, why shouldn't Detroit Creamery Company men be proud today? Surely 1,207 years of driving safely not only represents a splendid economy, but tells other road travelers that

their cream-and-orange-colored vehicles are manned by courteous, careful men, who lead their communities as exponents of safe road travel.

EDITOR'S NOTE: A reproduction of Detroit Creamery's gold safety award for drivers is shown on the first page of this article. Embossed lettering indicates the calendar year and the number of no-accident years achieved by the recipient of the medal.—H. C. F.

•

Dairy Co-Op Fleet

(*Continued from page* 20)

For convenience, the Association's own number is branded upon each tire, upon purchase, and that number is used in the tire records, instead of the more cumbersome designation of the tire manufacturer. The numbers, burned on the side of the tire with a branding iron, are assigned serially and each includes date of purchase. There can be no questioning of the age of a tire in this fleet, as shown by the records because the date is also right there on the casing.

The gathering of milk and cream in this area from the producer and the delivering of it clear through to the plant, is solely dependent on motor trucks. This procedure differs somewhat from that in a great many of the larger centers of the east where a network of railroads and interurban lines permits shipping the products long distances by milk train from local gathering points. Here, the truck must do both the pick-up work and the long-distance haul.

While the roads on which this fleet operates are, on the whole, excellent, and are not especially hard on the equipment, from the physical maintenance standpoint, still there is the factor of maintaining absolute reliability as far as possible, at all times, in handling this perishable product. In all kinds of weather—rain, ice or snow—the "show must go on."

The activities of the Association are managed by Will W. Henry. Next in charge is Sam Graham, fleet superintendent. It is indicative of good organization and management on his part that he is able to maintain this large fleet in such fine operating condition, and at the same time have it display an outward appearance to make it a fine moving advertisement for the Association, all with a staff of only seven men—foreman, service man, pump man, washer, greaser and two mechanics.

•

How to Keep Costs

(*Continued from page* 23)

operates a large or small fleet, will find that his cost records permit him to arrive at many worthwhile decisions on the basis of facts, rather than on guesses.

No fleet executive who is worthy of the position he occupies can afford to be without an adequate system of cost accounting. He may belittle at first the value of this record-keeping, and he may chafe at the detail it involves, but in the long run he will find that it has been an investment of time and effort which has paid him real dividends.

EDITOR'S NOTE: Undoubtedly many who read this article will be interested in checking up their cost-keeping systems, with a view to comparing them with others, or bringing them up to date.

In this connection, we have a supply of copies on hand of a Simplified Cost-Keeping System, designed so that it is workable in either a small or a large fleet, and with a minimum of printed forms, reproduced in full size.

If you would like a free copy of this Cost System, just drop a line to the Editor and ask for it; it's absolutely free and with our compliments.

If you'd rather use the post-card that is bound in this issue, opposite page 50, just tear it out, write *"Cost System"* across the face of it, and drop it in the mail. No postage is needed and no obligation is involved.

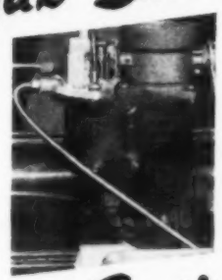
—H. C. F.

TEST THE NEW

HOOF Ford & Chevrolet Fuel Economizers

ON THIS SENSATIONAL MONEY BACK GUARANTEE

Gas Savings of 5% to 15%



GUARANTEED

Hoof guarantees you this gas saving on every governor-equipped Ford or Chevrolet in which you install the new Fuel Economizer Units. Test it for 30 days. If after this period you are not fully satisfied you save at least 5% to 15% in gasoline, Hoof will refund your purchase price.

Gas Savings of 15% to 25%

GUARANTEED

On fleets without governors a saving of 15% to 25% is guaranteed if both Hoof Governors and Economizers are installed.

ORDER TEST UNITS TODAY ON MONEY BACK GUARANTEE
List $2.25 (Ford)
$3.25 (Chevrolet)
See your Serviceman or Write

Here's Why You Save Money!

These new Hoof devices limit the use of the power jet to periods of peak load only, thus preventing the over rich mixture cause by "riding" the accelerator beyond the governed speed. They insure the proper fuel mixture, eliminate cause for hard starting and engine flooding.

WATSON TRUCKING CO.
Plymouth, Ind.
SAYS: "WE SAVE 9 to 10 GALLONS OF GAS per 200 mile trip PLUS OIL SAVINGS since we installed Hoof Economizer and Hoof Governor in our FORD TRUCK."

HOOF PRODUCTS COMPANY

Makers of the famous Hoof Cantilever Governors

Dept. BEF, 6543 S. Laramie Ave., Chicago, Illinois

Announcing the New HANDY Visible Action GOVERNOR

Yes, Mr. Fleet Boss! You can actually SEE THIS NEW HANDY WORK—look through the glass window and watch that famous little red cam (Patented) move in response to every change in throttle position.

Instant inspection! That's what this new Handy Visible means. A glance is all you need to be absolutely sure.

For a decade, Handy engineering has set the pace for the whole Governor art. The new Handy Visible caps a climax of useful invention.

The new Handy Visible is available only through Handy Distributors. Call yours today.

HANDY GOVERNOR, *Detroit*
Division of King-Seeley Corpn.

HANDY *Visible Action* GOVERNOR

PROTECTION HANDY ECONOMY

"Heavies" by Mack

(*Continued from page* 32)

service and the chain is a special 2-in. pitch, heavy-duty type to accommodate the severe service.

Typical of the gargantuan proportions of the main structural elements is the super-duty rear axle, a massive forging of heat-treated, chrome nickel steel bored out to form a tube, with an outside diameter of 6½ inches on the FC and 5⅜" on the FJ.

Frames on the Model FC have shipbuilding channel main rails, 12" x 37 lb., with a section modulus of 33.9, braced front and rear with large-diameter, tubular cross-members for torsional rigidity, and in the center by heavy box-girder type cross-members for lateral and longitudinal stiffness. The frame on the Model FJ has heat-treated chrome-manganese channel main rails, with dimensions of 10⅝" x 3¼" x 5/16", section modulus of 15.6 and cross-members of the same design as used on the FC.

Braking ability in keeping with the size of these trucks and the loads carried is provided by large area air-brakes equipped with oversize rigid-type shoes and heavy block-type linings. The parking brake on the drive-shaft is interconnected by means of a secondary valve with the air-chambers on the rear, thereby providing ample power for holding the truck on any grade, it is claimed. In addition, special emergency equipment is furnished, whereby a failure in any of the main system lines will automatically apply the rear wheel brakes from an isolated emergency supply, thus preventing the driver from being caught unaware with no brakes.

A number of these huge trucks are already at work in various quarries and surface coal-mining operations. Others have been installed at open-pit mining locations, notably the Copper Cliff, Ontario mines of the International Nickel Company (as illustrated in the lower photo) and the vast Mesabi Iron Range in Minnesota.

For complete details regarding these new Mack heavy-duty models, address Mack Trucks, Inc., attention of Mr. A. J. Cullen, Long Island City, N. Y. . . . We always appreciate it when you mention FLEET OWNER.

•

"Lindsay Structure"

(*Continued from page* 36)

signed for quick, easy assembly. During assembly tests at the Dry-Zero plant, two skilled men have put together a 12-foot truck-body, exclusive of floor and doors, in less than half a day. The simplicity of "Lindsay Structure" assembly and the fact that all parts are standard, makes maintenance and repair work economical. Damaged panels and framing can be replaced easily and quickly from the outside of the body.

No special tools or shop equipment are required for assembling "Lindsay Structure" materials into truck bodies. Speed wrenches of various kinds may be employed for accelerating assembly of the body framework. The small socket wrench used for attaching the panels to the framework is supplied with the material.

For your free copy of a new bulletin that completely illustrates and describes the new "Lindsay Structure" truck bodies, address Mr. Harvey Lindsay, c/o Dry Zero Corporation, 222 North Bank Drive, Chicago, Ill. . . . He'll be glad to know that you read this announcement in FLEET OWNER; you'll mention it, won't you?

•

Plymouth Commercials

(*Continued from page* 39)

impervious to wear than previously, according to the engineers.

Plymouth "double-action" hydraulic brakes are standard on all commercial jobs, so that stopping should always be under the driver's control.

The chassis-with-cab unit consists of the Plymouth Commercial Car chassis, including fenders, running boards and hood, and built-in cab, the

same as that used on the Pick-Up model.

The new Plymouth Commercial Pick-Up truck is illustrated at the top of this article. Note the richer appearance and larger size than last year. The lower picture in this article shows the new instrument board in the cabs of all 1939 Plymouth Commercials. It also illustrates the new vee-type windshield, which offers improved ventilation.

Literature covering the new Plymouth Commercials should be ready by the time you read this announcement. For your free copy address Harry G. Moock, c/o Plymouth Division of Chrysler Corporation, Detroit, Mich. . . . We always appreciate it when you mention FLEET OWNER. Sometimes it hurries things along.

•

Twin-Motored Tractor

(*Continued from page* 41)

Grico two-axle drive, adaptable to *all* makes of trucks, will continue to be manufactured. The two new units have been designed for adoption on Ford trucks exclusively, to be marketed for sale through distributors of the manufacturer and Ford dealers.

The new tubular trailing axle, is designed for Ford trucks, to provide for the safe carrying of about 100% overload to regular specified tonnage. It is equipped with wheels of regulation size, carrying standard tires and brake drums.

The 1939 Grico two-axle drive provides the loading capacity of the conventional heavy duty truck and other advantages including: increased load limits with minimum truck weight; maximum traction and stamina; standard truck speed; easier handling; longer truck and tire life, better distribution of load-weight and greater braking power. The chassis of any truck with a Grico two-axle drive may be equipped with all usual body types.

For interesting literature, complete data and prices address Gear Grinding Machine Company, Detroit, Mich. . . . Mention of FLEET OWNER will identify the source of your inquiry and will speed up the service.

•

Gar Wood Products

(*Continued from page* 43)

retainer plate is released and snaps back against the packing plate at the instant the lever operating the compressing ram, is moved. When the trough is filled, the loading doors are closed and locked, becoming part of the tail-gate ram. The valve-operating lever, at rear of body, is then moved and the two compressing jacks thrust the ram, the packing plate and the retainer plate, against the garbage in the trough, cleaning it out completely and packing it solidly into the body. The packing plate and tailgate ram are then returned to their starting position, while the retainer plate is held in position by an automatic catch. Loads are compressed by means of two hydraulic cylinders which operate the ram. This action also cleans out the trough in readiness for another filling.

For illustrated literature covering either or both of these new products, address Gar Wood Industries, attention of Mr. W. H. Hammond, Detroit, Mich. . . . We always appreciate it when you mention FLEET OWNER; often it speeds up the service.

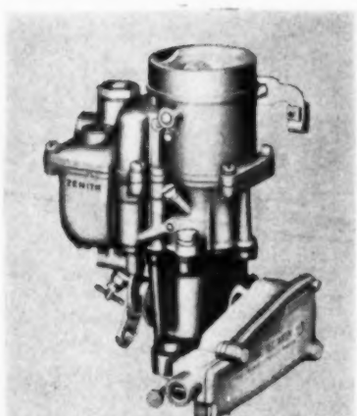
Studebaker Sees Much Better Outlook

"AT the beginning of 1938, the automotive industry faced a most unhappy situation. . . . Stocks of new and used cars were at peak levels and the rate of retail sales was running more than 50% behind that of 1937. . . . As the year closes, that situation is almost reversed. Stocks of unsold new and used cars are approximately 50% of what they were a year ago, and the rate of retail sales is substantially higher."—Paul G. Hoffman, President, The Studebaker Corporation, South Bend, Ind.

After the major details of your truck specifications are settled—
don't forget that famous last line: . . . . and
EBERHARD BODY FITTINGS
There's the final touch that avoids a prolific source of annoyance, dissatisfaction and expense. And too often a suitable standard of durability and design for hinges, locks, handles, etc., is not recognized.
Eberhard truck hardware has an enviable record for dependable service at the lowest cost for maintenance and, therefore, sets a trustworthy standard of quality. The big Eberhard line includes items for all sizes and types of truck bodies and for all sorts of uses.
Even ordinary fittings look all right in the package, but only the best can stand the gaff of modern truck operation—and, at the same time, provide the maximum of convenience and safety.
When setting your truck specifications, ask your dealer about Eberhard reliable hardware, or write direct to
EBERHARD MANUFACTURING CO.
Division of the Eastern Malleable Iron Co.
CLEVELAND, OHIO
INVESTIGATE these new EBERHARD items
CLAMPTITE Universal Lock for right-hand or left hand, single or double doors, and end gates; Key-locking handles for heavier doors; Stream-lined Hinges; Panel-Body Locks.
EBERHARD
AUTOMOTIVE HARDWARE
COMPLETE DESCRIPTIVE LITERATURE ON REQUEST
E

Matched!

FOR EFFICIENCY



Better Carburetion—Better Governing

Fleet owners everywhere are installing Zenith's new combination Carburetor and Governor. This perfectly matched unit has greatly simplified and improved governor-controlled motor transportation, and takes up practically no more room than a standard carburetor.

Equip one of your trucks. You'll get good fuel distribution, smoother and sharper governing action. You eliminate cheating by throttle manipulation. Yet regardless of load or grade, you get unlagging acceleration. It's better in every way than any separate carburetor and governor installation.

Downdraft and updraft types to fit most popular engines. Write for complete information now.

ZENITH CARBURETOR DIVISION
Bendix Aviation Corporation
696 Hart Ave. Detroit, Mich.

ZENITH
Combination
CARBURETOR AND GOVERNOR

Fluid Flywheel

(*Continued from page* 44)

into the other half, striking against the semi-circular plates, or vanes in this half, thus rotating it. The oil follows around the walls of the second half, or runner, and is thus led inward, where it eventually has to cross the one-quarter inch gap again and re-enter the first half, or driver.

The driver, which is attached to the engine, always turns just a little faster than the runner, which is attached to the rear wheels. This difference in speed between the two members is called slip, by the engineers. In ordinary driving, as on a level road at normal speeds, this slip is very low, approximately one per cent. Under heavy loads at low speeds, however, the slip becomes greater, and reaches its maximum when the car is left in gear while the engine is running and the car is stopped. This does not kill the engine, as in the ordinary car when brought to rest in gear without releasing the clutch. This is one of the extraordinary things which the fluid drive does. The car may be started smoothly from a stand-still in high gear simply by releasing the brake and stepping on the accelerator pedal.

Among the advantages of the fluid drive over the conventional type are: The car may be placed in high gear and normal traffic followed without declutching or shifting gears. The kickdown overdrive in conjunction with fluid drive gives virtually an automatic two-speed transmission in high gear. Declutching is unnecessary when stopping, as the engine will not stall. The clutch pedal is not sensitive to manipulation as in a standard car. Thus unskilled drivers should have no difficulty in making smooth starts. The fluid drive damps all torsional vibrations originating in the engine, and reduces shock and wear and tear on the whole driving train from the engine to the rear wheels, it is claimed. In addition, the ride is smoother and shocks are greatly decreased when suddenly speeding up or slowing down. Wear and tear on all parts of the driving mechanism are cushioned and considerable savings in maintenance and depreciation costs should result. Slow-speed operation is immeasurably improved. The car may be driven as slowly as desired in high gear without declutching, and there will be no engine thrashing or bucking as in a standard car.

Numerous safety features are incorporated in the fluid drive. When slippery road conditions are encountered, such as ice, mud, snow, sand, or loose gravel, it is much easier and requires much less skill to avoid skidding with a car equipped with a fluid drive than with a standard car, the engineers declare. With the engine running, the fluid drive gives a no-back feature on a hill, as the car may be allowed to remain in gear and the throttle opened just enough to prevent the car from rolling backward. The absence of gear shifting or clutch pedal manipulation in normal traffic leaves the driver free to devote all his attention to the road. When starting the engine, it is unnecessary to shift out of gear or declutch. This is particularly advantageous on a hill. The fact that the engine will not stall, contributes to safety of operation in heavy traffic, on hills, and in crossing railroads.

The engine may be used as a brake just as in a standard car and the fluid drive is said to be equally efficient on drive and coast. The engine may be started by pushing the car in gear just as in a standard car.

There is nothing new to learn in driving a car equipped with a fluid drive. A standard clutch pedal and remote control gear shift lever are provided and the car may be started by shifting through all gears as in a standard car. The operation when backing up is exactly the same as on a standard car. On a steep grade it is advisable to shift into a lower gear when starting the car. For maximum acceleration, one may shift through all the gears as in a standard car.

The fluid drive is made entirely of

stamped, pressed, and forged steel parts. The unit is completely free of any castings. The forgings used in the unit consist of the hub for the impeller housing and the hub for the runner. The large outer housing and the runner disc are made of pressed cold-rolled steel. The fins, 22 in the impeller and 24 in the runner, are made of stamped cold-rolled steel. The fins are permanently assembled into the impeller and the runner disc by three spot welds on each fin. The runner disc is permanently riveted to the runner hub. The runner is mounted in the impeller on a ball bearing, located in the forward part of the assembly. The runner is supported in assembly by the transmission drive pinion shaft.

The oil used in the fluid coupling is a low viscosity mineral oil. This oil is selected inasmuch as the bearing enclosed with the coupling requires lubrication and, at the same time, the pour point of the oil must be such that the oil will pour at the lowest anticipated temperature. Furthermore, mineral oil has no corrosive effect on any of the steel parts comprising the unit.

•

Dodge Personnel Changes

THE transfer of C. W. Chapman, until recently manager of the Pittsburgh region of the Dodge field organization, to the managership of the Cincinnati region is announced by Frank J. Timmens, general sales manager of the Dodge Division of Chrysler Corporation.

The Pittsburgh post vacated by Chapman will be filled by E. C. Quinn, former city manager of the Los Angeles region.

The task of filling Quinn's west-coast position is given to W. A. Sellman, formerly Dodge district representative for Southern California, with headquarters in Los Angeles.

Another transfer affects P. M. Minnich, formerly Philadelphia city manager, who hereafter will function as City Manager in Cleveland.

A fifth member of the Dodge organization to change territory is A. R. Howard who leaves his work as Dodge merchandising representative in New York City, to become Philadelphia city manager.

•

Bearing Manual Shows Interchangeability

NEW DEPARTURE has brought out a 20-page manual, showing the interchangeability of various makes of ball bearings for replacement. . . . In this manual, various makes of ball bearings are listed by number, and in each listing, the corresponding New Departure bearing number is given opposite that of the other make. . . . Those who use a lot of ball bearings will undoubtedly find this manual valuable. . . . For your free copy address C. B. Beckwith, c/o New Departure Mfg. Co., Bristol, Conn. . . . Mention of FLEET OWNER will hurry it along.

Road Builders to Convene on Coast

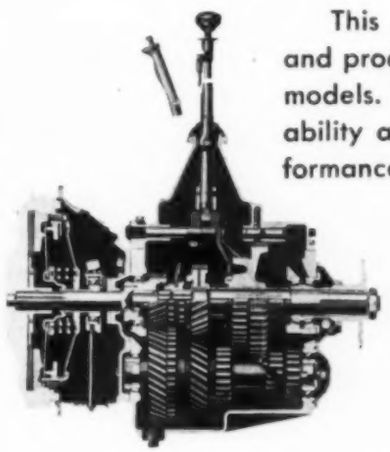
SAN FRANCISCO has been selected for the location of the 1939 Convention and Highway Exhibit of the American Road Builders' Association. . . . The dates are March 7, 8, 9 and 10. . . . Concurrently with the A.R.B.A. Convention and Highway Exhibit, the Associated General Contractors of America will hold their annual convention. . . . For details address Chas. Upham, Director, American Road Builders Association, National Press Bldg., Washington, D. C.

New Worthington Asst. Gen. Sales Mgr.

WORTHINGTON Pump & Machinery Corporation has appointed Walter B. Strong to the post of assistant general sales manager. . . . Formerly manger of the Corporation's export division, Mr. Strong in his new assignment will continue general supervision of export sales, and will also be identified with certain phases of domestic sales work. . . . George Gellhorn, Jr., will succeed Mr. Strong as manager of the export division.

20,000 years experience
IN THE AUTOMOTIVE INDUSTRY

● Actually the **Spicer** personnel offers many more than 20,000 man-years of engineering and production of automotive parts.



Brown-Lipe Helical Gear Transmissions, with 3, 4, 5 or 8 speeds forward, are available for any type of commercial vehicle... Above is illustrated the Brown-Lipe Model 5341 4-Speed Helical Gear Transmission.

This is the experience that developed and produces the **Spicer** equipment for 1939 models. The increased efficiency, dependability and economy of motor vehicle performance is a reflection of the like improvement in **Spicer** products. Since the earliest days of the industry, every year **Spicer** has developed and manufactured equipment to meet the demand for better performance.

Spicer equipped vehicles prove the value of experience and skill in manufacture. Users find dependable performance and remarkable freedom from repairs proof of how well **Spicer** serves the industry.

Spicer Manufacturing Corporation • Toledo, Ohio

BROWN-LIPE	SALISBURY	SPICER	PARISH
CLUTCHES and TRANSMISSIONS	FRONT and REAR AXLES	UNIVERSAL JOINTS	FRAMES READING, PA.

HE WANTED THE DIRTIEST MOTOR IN TOWN··

This particular Magnus Service Man wanted the dirtiest motor in town to show the first class cleaning job MAGNUSOL would do in 15 minutes. They handed him a big International, fresh from the road, caked heavily with dirt and grease—and in 15 minutes they had a clean motor with nary a drop of oil or grease to be seen.

FREE

48-page Automotive Cleaning Handbook. Goes thoroughly into all cleaning problems connected with truck operation and maintenance. Send for your copy TODAY.

MAGNUSOL

takes the "cling" out of dirt, oil and grease. It cleans quickly — thoroughly — safely. A perfect cleaner for motor and chassis and a lot more besides. Fine for exteriors—an ideal COLD tank cleaner for small parts. Cleans cement floors without scraping or scrubbing.

MAGNUSOL is non-flammable—harmless to paint and to skin—fumeless.

Write to have a Magnus Service Man call and demonstrate.

MAGNUS CHEMICAL COMPANY

Manufacturers of Cleaning Materials, Industrial Soaps, Metallic Soaps, Sulfonated Oils, Emulsifying Agents and Metal Working Lubricants

36 South Avenue — Garwood, N. J.

Magnus CLEANERS

Private Carriers Ask ICC to "Lay Off"

THE NATIONAL Council of Private Motor Truck Operators has asked the Interstate Commerce Commission to discontinue further proceedings affecting them, until it has been determined whether or not there is need for any commission jurisdiction over private carriers. . . . Acting on behalf of truck operators whose transportation is *incidental* to the transaction of their business, the Council requested that a second proceeding be deferred, pending determination as to the commission's jurisdiction.

•

New York to Launch Safety Campaign

PLANS to launch a $200,000 accident-prevention campaign were announced at a recent meeting of the Greater New York Safety Council. . . . It will be New York's first completely integrated program of accident-prevention and will include all five boroughs. . . . February is the month which has been set for the launching of this safety effort.

Matthews Elected N.S.P.A. President

LESTER MATTHEWS, assistant treasurer of the Sealed Power Corporation, Muskegon, Mich., was elected president of the National Standard Parts Association, at its recent convention in Chicago. . . . Other officers elected were V. C. Anderson, Chicago, senior vice-president; and Burke Patterson, Cleveland, junior vice-president.

•

Hoof Moves to New Factory

HOOF Products Company, having outgrown its old quarters near Chicago's "Loop" district, has moved to its recently purchased factory and office building, located at 6543 South Laramie Ave., Chicago, Ill. . . . In addition to doubling the space, the new location provides improved railroad and shipping facilities and allows for future expansion. . . . "A definite company increase in business and the development of new products —both necessitating an increase in space—were primary reasons for the purchase," said A. C. Hoof, president.

GMC Truck Sales Greatly Improved

DOMESTIC retail sales of GMC trucks during the first ten days of December exceeded deliveries in any 10-day period during the last 13 months, it was revealed by J. P. Little, vice-president directing sales for the General Motors Truck & Coach Division of the Yellow Truck & Coach Manufacturing Company. . . . The 10-day sales report shows an increase of 38 per cent over sales in the corresponding period of 1937. Unfilled retail orders, as of Dec. 10, stood 33 per cent above Dec. 10, 1937. . . . Dealer orders placed at the factory so far for 1939 model trucks have risen 30 per cent beyond the total recorded at this time a year ago.

•

K.D Holds Annual Sales Convention

THE K-D Lamp Company, Cincinnati, Ohio, held its annual sales convention November 30 and December 1st. . . . Representatives from all points in the United States and Canada, and from its export offices, were present. . . . Sessions were held in the Netherland-Plaza Hotel, Cincinnati, and in factory headquarters. . . . New K-D products were shown and discussed, and a trip through the factory was staged, where the representatives had an opportunity to visualize the engineering, designing, manufacturing, testing, production and assembly of K-D's well-known lighting products.

•

Chevrolet Sales Continue Upward

CONTINUING the sharp upward trend established in November, Chevrolet dealers sold 66,832 new passenger cars and trucks in December—an increase of 13,229 units, or 24.7 per cent, over sales for December, 1937. . . . Used car sales during the same period increased 3.7 per cent. . . . Total units, new and used, sold during the month, were 174,063, as compared with 156,989 units in December of the previous year. . . . This is an increase of 17,074 units or 10.9 per cent, according to W. E. Holler, general sales manager.

•

ICC Safety Rules Exclude N. Y. City

THE MERCHANT's Association of New York City recently announced that it has been advised by the Interstate Commerce Commission, that the latter has issued an order dated December 3rd, 1938, in which it holds that the safety provisions prescribed by it, relating to common and contract motor carriers, are *not* applicable to transportation by motor vehicle within the Metropolitan Area of New York City, as determined by the Commission. . . . The ICC expressed the opinion that local laws governing the operation of motor carriers within the Metropolitan Area are adequate to insure safety of operation, and that such transportation is quite different from that surrounding the movement of over-the-road carriers. . . . It also modified its finding with respect to taxicabs operating in the Metropolitan area; the latter are not required to be equipped with fire extinguishers.

Sterling Truck Acquires Fageol Truck

STERLING Motors Corporation, Milwaukee, Wis., announces that they have acquired the assets of the truck division of the Fageol Truck & Coach Company of Oakland, Calif. . . . A Sterling factory branch will be opened at 470 Bayshore Blvd., San Francisco, to serve both Sterling and Fageol owners in the Pacific northwest. . . . The manufacture of Fageol trucks was discontinued January 1st, but a complete stock of parts for all models will be maintained. . . . The Sterling factory branch at San Francisco will be operated under the management of L. A. Lundstrom.

•

Walter Peper Joins Smith & Gregory

WALTER PEPER has recently joined the staff of Smith & Gregory, Inc., New York, N. Y., distributors of automotive products. . . . Mr. Peper's efforts will be primarily devoted to sales work surrounding the Smith & Gregory Bendix-Westinghouse Automotive Air Brake franchise. . . . "Walt" is well known in automotive circles in the New York territory. His most recent connection was with the National Motor Truck Show, as assistant general manager. . . . He was chairman of the Metropolitan Section, S.A.E. a few years ago, and has a wide acquaintance among leading commercial vehicle operators and their engineers. . . . Our best to you, Walt!

I.A.A. to Meet in Houston, Tex.

THE 39th Convention of the International Acetylene Association is to be held in Houston, Texas on March 8, 9 and 10, 1939. Headquarters will be at the Rice Hotel. . . . In announcing the unanimous decision of the officers and directors, the Secretary of the Association referred to the splendid convention of the Association in Birmingham last year—the first in the South—also to the increasingly numerous requests and invitations that have been received by the Association during recent years to visit the great Southwest. . . . An interesting technical program, covering the most important developments in the application of the oxy-acetylene process of welding and cutting is in preparation. Announcements of subjects and speakers are to be made at an early date.

•

Maintenance Show on Coast

THE FOURTH Annual Automotive Maintenance Show and Wholesalers Convention of the "Pacific Empire" will be held from February 23 to 26th inclusive, at the Palace of Fine Arts, San Francisco, Calif. . . . This huge "World's Fair" of Automotive Products, combined with the Wholesalers Convention, will draw patronage from the 11 Western states, where nearly five million cars and trucks are operated and maintained. . . . Fleet operators, of course, are invited to attend.

N.A.P.A. Re-Elects Officers

THE National Automotive Parts Association, and its manufacturing associates, held their annual meeting in Chicago last month, at which Harry Lansdale, vice-president and general manager, reported a year of continued progress, with total sales volume on NAPA lines running in excess of 1937, on the basis of the first 11 months. . . . The officers of the Association for the past year were re-elected, and two members were added to the board. . . . A. F. Baxter, Unit Parts Corporation, Buffalo, N. Y., is president; Carlyle Fraser, Genuine Parts Company, Atlanta, is vice-president.

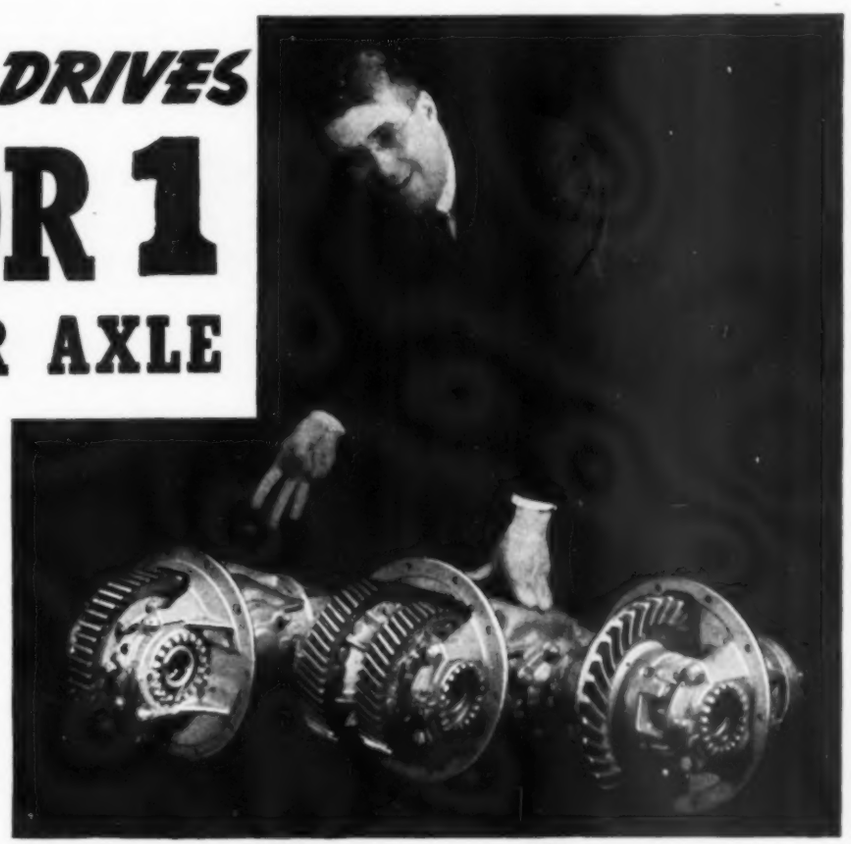
•

Thompson Exhibit Wins First Prize

THE EXHIBIT of Thompson Products, Inc., Cleveland, was awarded first prize for merchandising merit, by jobbers who attended the recent Automotive Service Industries Show at the Navy Pier, Chicago. . . . Kester Solder Company, Chicago, and the Perfect Circle Company, Hagerstown, Ind., won second and third prizes. . . . Four hundred manufacturers competed for the awards. . . . The Thompson exhibit featured a manual of servicing operations, reproduced in giant size, which the Company offers to the trade as a part of its 1939 merchandising program. . . . The display was conceived by Fred Witt, advertising manager for Thompson. . . . Congratulations, Fred!

3 FINAL DRIVES

3 FOR 1 REAR AXLE



With a Timken 3 for 1 Axle, your truck can be **geared to fit the job** without compromise or delay. For this new, rugged Timken Axle takes any one of **three** final drives in a complete range of gear ratios. Ask your truck dealer about Timken 3 for 1 Axles.

TIMKEN AXLES

The Timken-Detroit Axle Co., Detroit, Michigan
Wisconsin Axle Division, Oshkosh, Wisconsin

1 Double Reduction Drive

2 2-Speed Double Reduction Drive

3 Bevel Gear Drive

Now YOU CAN STOP THIS THIEF

with Parafleet

. . . A *New* Motor Oil that Knocks Out an *Old* Evil . . . SLUDGE!

For years . . . you've been asking for it. NOW . . . Paragon presents this NONE BETTER answer to the fleet owner's prayer. Let us show you what this truly amazing development in *sludgeless lubrication* can do toward slashing your maintenance costs.

The Proof is Yours for the asking . . . *Immediately!*

Paragon Oil Company, Inc.

BRIDGEWATER ST. AT NEWTOWN CREEK

BROOKLYN, N.Y.C.

Warns Against Wheel Misalignment

FRONT wheel misalignment is costing vehicle users in excess of $100,000,000 annually in needless tire wear. Loss in mileage is equivalent to a trip across the continent for every vehicle in the United States, Colonel Charles E. Speaks, president of the Fisk Tire Company, estimated recently.

To combat this tremendous loss, Colonel Speaks advocated that all operators immediately adopt a plan for tire inspection by a tire expert every 2,500 miles. Misalignment, he explained, becomes evident in irregular and excessive tread wear before it is recognized through mechanical troubles.

It costs the individual car owner, for instance, 15 per cent of his investment for front tires, or about $3.60, and 3,000 miles of unnecessary wear per year, Colonel Speaks declared.

"While operators have been educated to check their oil, grease, batteries, etc., many of them have not learned the importance of periodically checking tires for wear, and through them determining the mechanical condition of various parts of their vehicles.

"A mere five-minute examination offers vital protection against driving with brake drums out-of-round, with excessive caster, camber, or toe-in action, as well as with improper alignment. First symptom of all these troubles is undue tire wear. Regular inspection, therefore, protects against both wasted tire mileage and the development of serious mechanical troubles, which may cause accidents," Colonel Speaks concluded.

●

New Motor Gasoline Survey Available

SERVICE station gasolines in the various price classifications fall into definite groups with regard to octane rating, distillation range, vapor pressure, and other characteristics, according to a gasoline survey report for the summer of 1938, recently issued by the Bureau of Mines, United States Department of the Interior. The octane-number ratings as indicated by the range of 90 per cent of the samples show a slight increase in all three grades of gasoline over the previous summer survey.

Gasoline survey reports are made semi-annually by the Bureau of Mines to give information as to the quality of gasolines sold generally throughout the United States. This information is desired by automobile designers to enable them to provide the best engines possible to take advantage of the characteristics given to the gasolines by the skill of the refiners. The reports also supplement surveys made by individual petroleum refiners who need to know the characteristics of gasolines being made by all other refiners so they can manufacture a product within the limits of uniformity for satisfactory engine operation.

For more than 20 years the Bureau of Mines has reported periodically on analyses of gasolines sold to the general public at service stations throughout the United States. Recently these surveys have been made in co-operation with the Co-operative Fuel Research Committee, which is a joint activity of the Society of Automotive Engineers, the American Petroleum Institute, the Automobile Manufacturers' Association, and the National Bureau of Standards. The paper recently issued in this series, Report of Investigations 3429, Co-operative Fuel Research Motor Gasoline Survey, Summer 1938, compiled by E. C. Lane, may be obtained without cost from the Bureau of Mines, Information Division, Washington, D. C.

Study Shows True Highway Tax Costs

SPECIAL motor vehicle taxes paid by highway users have increased more than 700 per cent in fifteen years, with the result that the total of such payments exceeded the amount of money spent for all state and county highways, including connecting streets through cities and towns.

This is revealed in a study issued recently by the National Highway Users Conference under authorship of John E. Walker, former special assistant on taxation to the Secretary of the Treasury.

The study shows that the average per-vehicle payment of special motor vehicle taxes jumped from $12.22 in 1921 to $48.15 in 1936, the most recent year for which official figures are available. The average special taxes paid by the various classes of motor vehicles were: passenger cars, $38.78; privately owned and operated trucks, $80.83; contract carrier trucks, $161.66; common carrier trucks, $242.49; and common carrier buses, $785.22.

The total amount collected from highway users in special taxes during 1936 was $1,377,148,000. Of this sum, $1,066,340,000 was paid to the states in registration fees, gasoline taxes and motor carrier taxes; $18,400,000 to counties and municipalities in fees and taxes, and $292,408,000 to the Federal Government in excise taxes, which included the one cent tax on gasoline. In addition to these special taxes, motor vehicle owners paid general taxes including $41,485,000 in personal property taxes on their vehicles.

State and county highway expenditures for 1936 totalled $1,371,234,000, of which $696,433,000 was for construction, $469,202,000 for maintenance, $82,134,000 for miscellaneous purposes, $7,003,000 for equipment and machinery, $116,462,000 for interest on bonds. These expenditures did not include monies spent by WPA and other agencies for relief work on local roads.

General property taxes for state highways decreased 96 per cent during that period while funds available for state highways increased 170 per cent and the number of states levying property taxes or drawing upon general funds to build state highways dropped from 36 to 11.

Mr. Walker's study, published by the Conference under the title *Highway Tax Costs*, is one of a series undertaken by him to bring to light the pertinent facts bearing upon expenditures for highway purposes and special taxes paid by highway users.

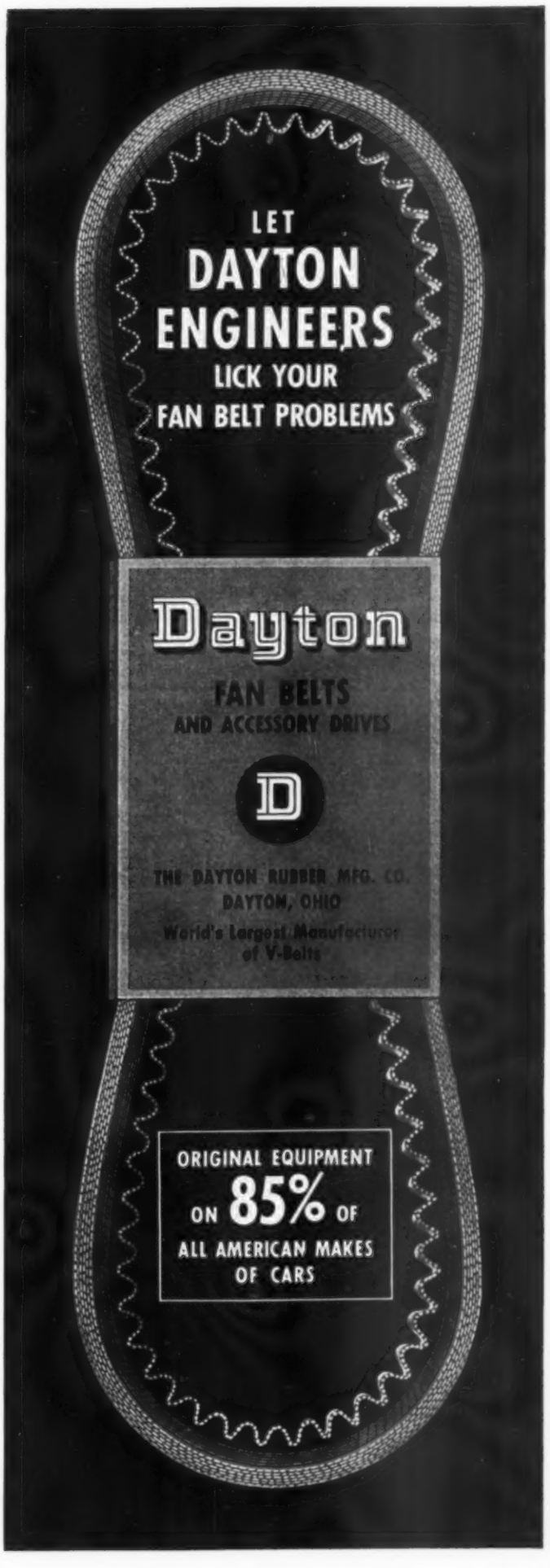
●

More Safe Drivers Receive Awards

AT a meeting of all drivers of Olney & Payne Bros., Inc., coal dealers at 72 Broad Street, Pawtucket, R. I., held recently, seven received awards for their records of safe driving over the past year.

On behalf of the American Mutual Liability Insurance Company, whose service to automobile truck and commercial fleet policyholders includes encouragement and stimulation to employees to drive safely, F. B. Brown, Safety Engineer of that Company, presented a gold medal and seal to Albert Arnold who has operated his vehicle for five years without a single accident.

Mr. Frank Ruddle, Superintendent of Olney & Payne, who was in charge of the meeting, made the other award presentations. Russell Oswald received a seal denoting his three years of no-accident driving while Frank Cecchini, Charles Duckworth, and Joseph Fournier received 2-year Seals. Asa Burgess and Howard Chase received Certificates of merit for completing one year each of safe driving.



Webster-izing

THE HIGHEST QUALITY OF RETREADING — RECAPPING

Only authorized Webster-izing Agencies can offer this Double-Guaranteed process to extend your retread — recap mileage to *new* or *better* than *new-tire mileage*. WEBSTER RUBBER COMPANY, WARREN, OHIO.

IN 1939

FORD ECONOMY

COVERS A WIDER RANGE OF TRUCK OPERATIONS

Three V-8 engine sizes—95, 85 and 60 hp. Forty-two different body and chassis types. A wide choice of special equipment, including optional factory-installed two-speed rear axle, gear ratios, clutches and transmissions. Arrange through your Ford dealer for an "on-the-job" test.

FORD V·8 TRUCKS
AND COMMERCIAL CARS

Be Sure to Specify

MIDLAND

(Christensen)

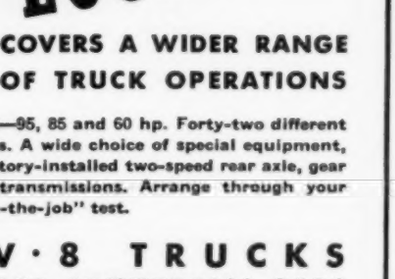
POWER BRAKE EQUIPMENT

See your Midland Distributor or write for new 12 page booklet.

THE MIDLAND STEEL PRODUCTS CO.
10609 Madison Ave. • Cleveland, Ohio

This **FOUNTAIN BRUSH**
FOR WASHING TRUCKS—BUSSES
CUTS WASHING TIME IN HALF!

Quickest, easiest, best for fleet care. Made in hollow, cast aluminum head with four foot handle supplying continuous stream of water. Bristles sturdily set in head and flare to 8" diameter. Weighs only 2¾ pounds. This brush will easily pay for itself many times over in a few months. Order today and ask also for our big, 72 page catalog.



$10.50 Postpaid • Guaranteed

FLOUR CITY BRUSH COMPANY
301 Fifth Ave. So., MINNEAPOLIS, MINN.
or PACIFIC COAST BRUSH CO.
2245 East 38th St., Los Angeles, Calif.

Helpful Hint on Transferring Designs

FOR various uses it is frequently desired to transfer a design, print, or drawing, to paper, cloth, wood, or other surfaces. This can readily be done by employing the following simple solution of familiar ingredients:

Glycerine	1½ parts
Soap	4 parts
Alcohol	10 parts
Water	10 parts

With this liquid wet thoroughly the print or drawing to be transferred. Remove any excess of liquid with blotting paper, and invert print on the paper, cloth, or other surface to which it is to be transferred. Lay a piece of paper over this and rub with a blunt article such as a knife handle.

FOR THE OIL GASOLINE & WATER CONNECTIONS

VELLUMOID

Ask for VELLUMOID by name, and be sure you get VELLUMOID. Every yard is backed by 26 years of manufacturing experience. You can absolutely rely on VELLUMOID.

THE VELLUMOID CO., WORCESTER, MASS.

Gunk CLEANS CLEAN

DEGREASER

COLD PROCESS
GENERAL PURPOSE
GARAGE AND CHASSIS
GREASE REMOVER

Gunk CLEANS CLEAN

Not only dissolves grease and oil but emulsifies it as well
Your wholesale jobber has GUNK CONCENTRATE or can pick it up for you—ASK HIM!
THE CURRAN CORP., BOSTON OR WEST COAST: 445 TURK ST., SAN FRANCISCO, CALIFORNIA

Survey Shows Buses Pay Heavy Taxes

BUSES, in addition to performing the important public service of transporting persons, usually of limited means, from where they are to where they want to go, also pay heavy taxes. According to a study made recently by John E. Walker, former assistant on taxation to the U. S. Secretary of the Treasury, the average bus in the United States pays $785.22 annually in gasoline and other automotive taxes.

Typical of the heavy taxes paid by bus lines are those falling on the line operating between Montgomery and Birmingham, Ala., a distance of about 100 miles. Taxes on the gasoline used by these buses averages $19.20 daily, or $6,912 a year. A state tax of 1c per mile is also levied on the buses, which amounts to $720 a month, or $8,640 a year. These two levies total $15,552 annually. In addition, various other taxes are assessed against the line, adding substantially to its tax burden.

●

Ford Reveals Plans for Western World's Fair

DETAILS of the Ford Motor Company's exhibit at the 1939 Golden Gate International Exposition on Treasure Island in San Francisco Bay have recently been announced.

Tribute to the contributions of the western states to the growth of the automobile industry will be paid by the Ford exhibit, which will be located almost in the shadow of the San Francisco-Oakland Bay Bridge, longest bridge in the world.

Situated at the north end of the Court of the Seven Seas, the Ford exhibit will embrace 42,000 square feet of floor space devoted to a dramatic presentation of the scope of the Ford industry. The architectural treatment will be in harmony with the other Exposition buildings.

Theme of the exhibit will be a *"Fountain of Western Products"* which will dominate the horse-shoe entrance hall opening off the court. The fountain will display the raw materials contributed by the western states, including sillimanite, the foundation of spark plug porcelain, which is mined high in the Sierras; as well as copper, silver, lead, wood, petroleum, cattle, wool and mohair.

Around the walls of the hall will be dioramas showing the source of these and other raw materials such as coal, iron, rubber, etc.

MADE BETTER TO WORK BETTER

● Gardiner 30/70 Body Solder is used and recommended by leading car makers, body builders and shops from coast to coast. Available in regular bars, ½-pound bars, meter bars, and in time-saving 14-inch lengths of ¼-inch round to fit any soldering gun. Lowest prices made possible by distinctive modern production methods and large volume. Jobbers everywhere sell Gardiner dependable body, bar, wire and flux-filled solders and Babbitts.

Gardiner METAL CO.

4810 SOUTH CAMPBELL AVENUE, CHICAGO, ILL.

This is No. 4 of a series of pertinent facts. The fifth will appear in the next issue.

4 is this true or false ?
"Wasted Time Every Day IS Avoidable"

The statement is TRUE! Wasted time IS avoidable. Of course, you can't ride each of your trucks every day to check on the driver's use of his time. You can, however, install an automatic checker that will ride the truck and tell you at the end of the day or week about every MINUTE of the truck's operation! This automatic check will tell you many things: It will tell you where he is LOSING time, waiting for loads etc., a loss that you can usually stop if you know about it. It will remove the cause for speeding. It gives you an *accurate* and *complete* record for the hours of service act. This silent, automatic rider is the

RECORD MASTER

Quickly and easily installed in the truck with two screws or bolts, the RECORD MASTER automatically records on a specially prepared chart EVERY STOP AND MOVEMENT of the truck on its route. When you can SEE facts, you can deal with them. By referring to the chart, you can see just when the truck was stopped and when it was moving. Knowing your routes and schedules, you can easily tell from the chart exactly the story of the truck's operation. Let us tell you the complete story of RECORD MASTER'S many advantages and how it can easily save you from $1 to $1.50 a day on operating costs—PER TRUCK!

WRITE FOR FREE FOLDER

A request on your letterhead will bring you immediately our illustrated folder giving all the details and prices. We'll tell you, too, the experience of other fleet operators with RECORD MASTER. Write TODAY.

HERCULES AUTOMOTIVE SALES CORP.
THORPE BUILDING MINNEAPOLIS, MINN.

"The Brake People"
BRAKE LINING · BRAKE SHOES · BRAKE REPAIR
MILEY

4 years ago MILEY alone among brake lining manufacturers realized that replacement Brake Shoes were an essential adjunct to profitable brake servicing, and, at that time began the manufacture of Brake Shoes. Today, MILEY is still the only lining manufacturer manufacturing brake shoes for 85% of the cars and trucks. MILEY brake shoes come either unlined or ready lined in packaged sets.

MILEY leadership in new fundamental developments in the brake lining field is proverbial. They were the first with a semi-molded lining, (1928) Ebonite; first with a metal base lining (1930 BLACK GOLD); first with replacement brake shoes (1934) first with hydraulic brake parts, etc. It is safe to rule that, if it's for brakes, MILEY will be first to have it.

BRAKE SHOES

Write for MILEY Brake Servicing Chart

GOOD BRAKE LINING
L.J. MILEY CO.
CHICAGO . . . U. S. A.

1466 S. MICHIGAN AVENUE CHICAGO, U. S. A.

A Yardstick *of* Tire Performance

This is Schrader's No. 6060, the fleet serviceman's favorite tire gauge. Careful manufacture and individual calibration give it infinite accuracy. And this accuracy is retained even under extreme conditions by its rugged "direct action" construction. A dependable, all-purpose instrument with a pressure range from 10 to 160 pounds. Price to fleet operators $2.40.

Your tire or parts supplier will show you this popular gauge and other Schrader Gauges priced from $.85 to $4.90.

Schrader

REG. U.S. PAT. OFF.

Service Tire Gauge

A. SCHRADER'S SON, BROOKLYN, N. Y.

Division of Scovill Manufacturing Company, Incorporated

Cautions Against Tire Handling Mishaps

MANY lives are lost and many injuries are suffered annually in the United States, from lack of caution in the simple matter of mounting or dismounting a tire, R. A. Gray, service manager of the Fisk Tire Company, warns.

"Loss of limbs and even decapitation have resulted from failure to make certain that rim-rings are locked properly. As pressure is applied to a newly mounted tire, the insecure ring flies loose with the force of dynamite. The worker is bending over with an air-hose in hand, usually in such a position that he cannot avoid being hit," Mr. Gray said.

The same danger exists when dismounting a tire. Common practice is to roll it across a garage floor and drop it on its side. The softened tire has released the locking arrangement, but occasionally enough pressure remains to hurl the ring through the air with disastrous results.

"Making certain that all parts are tightly fitted when mounting, and releasing all air before dropping a tire to be dismounted will completely eliminate this type of accident," Mr. Gray declared.

●

Timely Hint for Company Executives

WHILE Flat Foot Floogie is identified by Tin Pan Alley as a "Floy Floy," he, or she—as the case may be—has no sur-name and no Social Security Account number in the wage earnings file of the New York Bureau of Insurance Control, from whence come the checks for payment of state unemployment insurance benefits.

Consequently, Flat Foot, as well as 15,000 other individuals similarly recorded in the Bureau, probably would have great difficulty collecting benefits if he, or she, should apply for them. In the file with Flat Foot are Fish Face and Dummy, to say nothing of Doc, Blubber, Shorty, and Smokey. On the earnings of all of them, former employers have made contributions to the Unemployment Insurance Fund.

Others in the "Unknown file" at the Bureau are identified by first names only. There is a stack of cards bearing the name "Mary" which is six inches deep. Other stacks almost as large are records of earnings contributions in behalf of hundreds of Joes, Johns, Jameses, as well as Yettas, Yolandas, and Zonas. There is one record for "Alexander the Great," another for "Strawberry," and a third for "Red." One card is made out merely to "D," while still another is for "D. F."

Examination of the records for these workers with very incomplete identification shows that their earnings, for the most part, were small—so little that in the majority of instances it is probable that they would not be eligible for benefits even though they should apply. This, according to officials of the Bureau, is believed to indicate that these workers were of the so-called "fly-by-night, here-today-gone-tomorrow" type—the "floater" of the employment world.

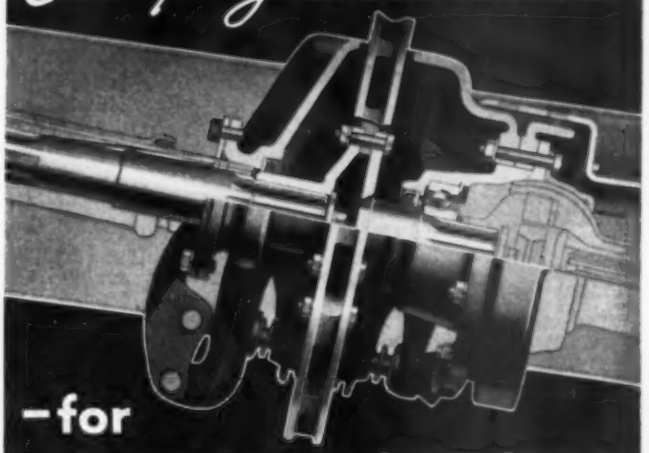
Nevertheless there are some of these unidentifiables who might prove eligible if they applied for benefits and it was humanly possible to locate the record of earnings on which eligibility could be computed.

In addition to these 15,000, more than a million cards are in the same file at the Bureau, representing the earnings records of probably half a million workers identified only by names and with no Social Security Account numbers. It is important, therefore, that full names and Social Security numbers be used at all times.

ADVERTISERS' INDEX:

Alan Wood Steel Co.	15
American Brakeblok Corp.	—
American Cable Division of American Chain & Cable Co.	65
Bendix Products Corp.	—
Bendix-Westinghouse Automotive Air Brake Co.	—
Brunner Mfg. Co.	—
Champion Spark Plug Co.	3
Chevrolet Motor Co.	11
Cummins Engine Co.	25
Curran Corp.	62
Dayton Rubber Mfg. Co.	61
Dodge Div. of Chrysler Corp.	31
Dry-Zero Corp.	21
Eberhard Mfg. Co.	55
Electric Storage Battery Co.	—
Ethyl Gasoline Corp.	—
Exide Batteries	—
Flour City Brush Co.	62
Ford Motor Co.	62
Fruehauf Trailer Co.	13
Gardiner Metal Co.	63
Gerstenslager Co.	—
Goodrich Co., B. F.	66
Hall Mfg. Co.	7
Handy Governor Div. of King-Seeley Corp.	54
Hawkinson Co., Paul E.	37
Hein-Werner Motor Parts Corp.	33
Hercules Automotive Sales Corp.	63
Hoof Products Co.	53
Ingersoll-Rand Co.	—
Ivano Inc.	51
K-D Lamp Co.	66
Mack Trucks, Inc.	—
Magnus Chemical Co.	58
Midland Steel Products Co.	62
Miley Co., L. J.	63
Motor Improvements, Inc.	8
Oakite Products Inc.	6
Paasche Air brush Co.	66
Packard Electric Division	—
Paragon Oil Co., Inc.	60
Philadelphian Hotel	66
Reo Motor Car Co.	Front Cover
Schrader's Son, A., Division of Scovill Mfg. Co., Inc.	64
Sealed Power Corp.	4th Cover
Seiberling Rubber Co.	2nd Cover
Service Recorder Co.	52
Sherwin-Williams Co.	—
Smith Co., E. M.	29
Spicer Mfg. Co.	57
Standard Oil Co. of Indiana	27
Sterling Cable Corp.	—
Studebaker Corp.	19
Texas Company	5
Timken-Detroit Axle Co.	59
Timken Roller Bearing Co.	66
Tyson Roller Bearing Corp.	4
United States Steel Corp.	3rd Cover
Vellumoid Co.	62
Webster Rubber Co.	62
Wood Steel Co., Alan	15
Zenith Carburetor Co.	56

TRU-STOP *Emergency* **BRAKES**



—for Chevrolet and Ford V-8 Trucks and Buses

—mean Smooth and Positive Stops

● There's no doubt about stopping your heavily loaded vehicles, no matter what the speed, when you have TRU-STOP Emergency Brakes. There's no doubt about the smoothness of each stop—about the entire absence of squeals, chattering or grabbing.

TRU-STOP Emergency Brakes are economical as well as efficient. A self-cooling ventilated disc prevents overheating—makes linings last much longer. Any mechanic can install these brakes—any driver can easily adjust or reline them.

BUY ACCO QUALITY *in TRU-STOP Emergency Brakes, TRU-LAY Brake Controls, WEED AMERICAN Bar-Reinforced Tire Chains, TRU-LEVEL Oil Controllers and MANLEY Garage Equipment.*

AMERICAN CABLE DIVISION
12-252 General Motors Bldg.
Detroit, Michigan
San Francisco: 630 Third Street

ACCO
AMERICAN CHAIN & CABLE COMPANY, Inc.
In Business for Your Safety

FREE To FLEET OWNERS

New 48-Page Book

A Guide to Lower Painting Costs and Finest Finishes

300 PHOTOS

Here's a new guide to finer, faster finishes—an authoritative 48-page book containing useful facts on modern airpainting methods.

An up-to-date compilation of what's new in airfinishing. Easily understood. Interesting. Shows you how to cut airfinishing costs.

We welcome an opportunity to supply you with a copy—free and without obligation.

Paasche Airbrush Co. 1904 Diversey Parkway CHICAGO

ESTABLISHED IN 1905

K-D SAFETY LIGHTING EQUIPMENT

A MODERN MIRACLE OF REFLEXION

K-D TRIFLEX-P

Get the details

BURNS borrowed light from the other cars . . . reflexed illumination from 300 to 700 feet . . . permanent . . . rugged . . . shatterproof . . . a marvel of perfection.

And exceeds by 32 times the requirements of S.A.E.-I.E.S. and the I.C.C. Approvals applied for.

Members by Invitation . . . Rice Leaders of the World Association

The K-D Lamp Co. CINCINNATI, O.

I CUT MY TIRE COSTS PLENTY WITH GOODRICH SILVERTOWNS

Truck owners find that truck tire costs hit rock bottom when they switch to Goodrich Silvertowns. Here's why: Silvertowns have a new invention—Triple Protection—built into the sidewall. It positively checks 80% of all premature failures. It cuts down on tire delays—adds mileage. See a Goodrich dealer for prices.

Goodrich *Triple Protected* Silvertowns

FOR TRUCKS AND BUSES

Be sure to replace a TIMKEN Bearing with another *genuine* TIMKEN Bearing. Look for the trade-mark "TIMKEN" stamped on the cup and cone.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN

TAPERED ROLLER BEARINGS

U. S. Funds To Build Toll Super-Highway

THE Federal Government is supplying all of the money to build a 162-mile toll super-highway between Harrisburg and Pittsburgh, Pennsylvania, costing $58,000,000. Of this huge sum, $26,000,000 will be a direct grant from the Public Works Adminstration and $32,000,000 a loan from the Reconstruction Finance Corporation.

This super-highway, the first of its kind undertaken in the United States, will be a four-lane road following the roadbed of the South Penn Railroad, begun as a rival to the Pennsylvania Railroad between Harrisburg and Pittsburgh many years ago, but never finished.

Construction will be under the direction of the Pennsylvania Turnpike Commission.

HOTEL PHILADELPHIAN

FORMERLY HOTEL PENNSYLVANIA

DANIEL CRAWFORD, Jr., Manager

39th and CHESTNUT STREETS

PHILADELPHIA, PENNA.

Our courteous and competent staff will give you the utmost in friendliness, comfort and service. Conveniently located to all stations, and only five minutes away from the heart of the business section.

600 ROOMS each with bath from $2.75 up

Lounge and Restaurants. Unrestricted Parking to 3 A.M.

Can COR-TEN take it?

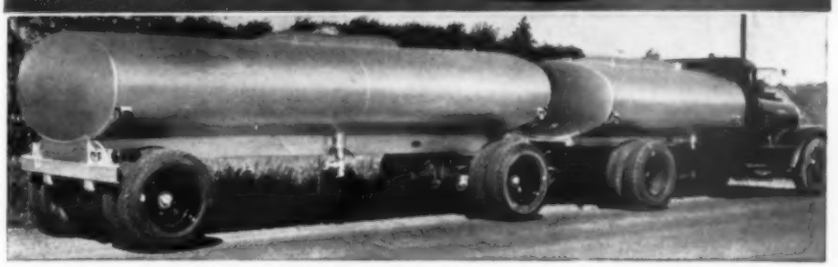
...look!

HERE'S a picture that shows at a glance why U·S·S Cor-Ten is the *safest* construction you can use for building gasoline hauling units lighter.

Made of 14 gauge Cor-Ten and filled with 150 gallons of water, this test tank was dropped smack on a wooden floor from a height of 23 feet. Sure it's banged up—in some places the welded seams are folded absolutely flat. But examination showed that no leaks had developed. Here's proof of Cor-Ten's marvelous resistance to impact and puncture. Shows you just how tight and downright tough Cor-Ten welded joints can be.

Tests like these, made by various tank makers with uniformly excellent results, have convinced them that they can bank on Cor-Ten in getting rid of dead weight in tank construction. Redesigning to use this inexpensive high tensile steel, they've trimmed hundreds of pounds off their tank trucks—and added an extra gallon of payload capacity for every 6¼ pounds saved. Their 9000 gal. tanks now carry 350 extra gallons; 5000 gal. tanks carry 300 additional gallons; in 3500 gal. tanks, 150 extra gallons ride free; 3000 gal. tanks now haul 100 more gallons at no extra cost—all at no increase in total weight. Figure the profits out for yourself—they run up to $100 a month in some cases.

U·S·S Cor-Ten has approximately twice the yield point of mild steel — has 4 to 6 times the resistance to atmospheric corrosion, yet in many applications it costs little if anything more to use. And remember, Cor-Ten can be formed and fabricated with only slight modifications from shop practice for mild steel. Our Cor-Ten book is available upon your request.



BUILT LIGHT WITH COR-TEN—Tank truck and trailer built by Beall Pipe & Tank Corp., Portland, Ore., for Goodman Oil Company, Boise, Idaho. Gross weight loaded—54,000 lbs. Truck tank weighs 2200 lbs.; capacity 1850 gals. Trailer tank weighs 3550 lbs.; carries 3500 gals.—Approximately one lb. per gal.

U·S·S HIGH TENSILE STEELS

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco* · NATIONAL TUBE COMPANY, *Pittsburgh*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*

United States Steel Products Company, New York, *Export Distributors* • Scully Steel Products Company, Chicago, *Warehouse Distributors*

UNITED STATES STEEL

GRANOSEAL SURFACE

exclusive with

SEALED POWER RINGS

prevents Ring and Cylinder Wall Scuffing

TESTS definitely prove that Granoseal Surface is more oil absorbent and prevents metal-to-metal contact more efficiently than any other surface. That's why car and truck manufacturers specify it not only for rings but for tappets, cam shafts and cam gears. Only Sealed Power Rings have the *genuine* Granoseal Surface.

So—get Sealed Power Rings. They're better engineered. Cost records will prove their superiority.

SEALED POWER CORPORATION

Muskegon, Mich. • Canadian Factory, Walkerville, Ont.

Piston Rings, Pistons, Pins, Expanders, Valves, Sleeves, Spindle Bolts and Bushings

The Sensational
STA-TITE
"M. D."
the drastic ring that cures the worst oil pumpers

SEALED POWER PISTON RINGS

BEST IN NEW CARS! BEST IN OLD CARS!